



MNU Research Facilities and Field Stations

MNU members will, where possible, make major specialised equipment, collections, facilities and field stations accessible to other partners. This document provides details of facilities that are currently open for partners to access.

The initial overview table lists the facilities by location, with page numbers for more detailed descriptions of each facility, listed by member institution.

Last updated: December 2016

Location	Institution	Facility	Short description	Discipline	MNU research theme	Further information
Australia: West Pingelly, Western Australia	UWA	UWA Future Farm 2050	1500 hectare farm developing a profitable mixed-enterprise operation	Agriculture, Restoration Ecology		p. 50
Brazil: Pró-Mata, Rio Grande do Sul	Tübingen	Tübingen Research Station in the Brazilian Araucaria Forest	Field station in araucaria forest			p. 40
Canada: Lake Opinicon, Ontario	Queen's	Queen's University Biological Station	Field station for research and study in ecology, evolution, conservation and environmental biology	Biology, Environmental Science, Geology, Geography		p. 27
Canada: Kingston, Ontario	Queen's	Innovation Park	Technology development hub	Sciences, Engineering	Energy, Resources & Environment	p. 30
Canada: Sudbury, Ontario	Queen's	Sudbury Neutrino Observatory (SNOLab)	Underground laboratory for astroparticle physics (primarily neutrinos and dark matter)	Physics, Astronomy		p. 31
Canada: Department of Chemistry, Queen's University	Queen's	Mass Spectrometry and Proteomics Unit	Mass spectrometry services and expertise for the analysis of small and macromolecules, proteins and enzyme	Chemistry		p. 32
Canada: Department of Geological Sciences and Geological Engineering, Queen's University	Queen's	Queen's Facility for Isotope Research	Isotopic analysis of elements extracted from carbonates, silicates, sulfates, sulfides, phosphates, waters and organic matter	Geological Sciences, Geological Engineering		p. 33
Canada: Queen's University	Queen's	Coin Collection of the Department of Classics and Department of Art History & Art Conservation	Over 600 coins from the Diniacopoulos Collection of Antiquities	Archaeology, Art Conservation, Art History, Economic History, Social History	Digital Humanities	p. 34

Gabon: Lambaréné	Tübingen	Centre de Recherches Médicales de Lambaréné	Clinical, epidemiological and basic research facilities associated with the Albert Schweitzer Hospital in Lambaréné, Gabon	Medicine, Biology, Infectiology, Vaccinology, Human Parasitology, Tropical Medicine, Basic Research, Clinical Research, Microbiology, Parasitology		p. 42
Germany: University of Tübingen	Tübingen	Center for Light-Matter-Interaction, Sensors and Analytics (Core Facility LISA [†])	Nanostructure Laboratory for thin film deposition, micro- and nano-patterning, thin film / surface analysis and laser microscopy / spectroscopy	Physics, Chemistry, Nanosciences, Material Science and related disciplines	Quantum Science	p. 44
Germany: University of Tübingen	Tübingen	Quantitative Biology Center (QBiC)	Interdisciplinary facility supporting modern high-throughput, data-driven research in the life sciences, from the experimental design, to the omics data generation to data analysis and archiving	Genomics, Transcriptomics, Proteomics, Metabolomics, Bioinformatics		p. 46
Germany: University of Tübingen	Tübingen	eScience-Center	Center providing the infrastructure necessary to promote efficient and sustainable use of digital research methods in the Humanities	Humanities	Digital Humanities	p. 47
Germany: University of Tübingen	Tübingen	Coin Collection of the Institute of Classical Archaeology	Collection of over 20,000 objects from the ancient world to modern times, including coins, medals, banknotes, casts and electrotypes	Archaeology, Art History, Economic History, History, Anthropology	Digital Humanities	p. 49
New Zealand: Dunedin	Otago	RV Polaris 2	Vessel for teaching, research and commercial activities	Marine Science, Geology, Oceanography, Antarctic Studies, Climate Change	Energy, Resources and Environment	p. 36

New Zealand: Dunedin	Otago	Beryl Brewin	Short range boat	Marine Science, Geology, Oceanography, Climate Change, Environmental studies		p. 37
New Zealand: Oban, Stewart Island	Otago	Stewart Island Field Station	Accommodation and laboratory space	Geography, Ecology, Marine Studies, Botany, Environmental Biology, Conservation		p. 38
New Zealand: Portobello Peninsula, Otago	Otago	Portobello Marine Laboratory	Fish hatchery, research laboratory and aquarium	Aquaculture, Zoology, Ecology, Conservation, Environmental biology		p. 39
Samoa: National University of Samoa, Apia	Otago	University of Otago House	Accommodation for academics conducting research in Samoa	Pacific Studies		p. 35
South Africa: South African Astronomical Observatory, Northern Cape Province	Dartmouth	Southern African Large Telescope	Largest single optical telescope in the southern hemisphere	Astronomy		p. 10
Sweden: Gullmarsfjorden	Uppsala	Klubban Biological Station	Marine biology field station with boats	Marine Biology		p. 52
Sweden: Lake Erken	Uppsala	Erken Laboratory	Aquatic ecology laboratory	Evolutionary Biology		p. 54
Sweden: Ar, Island of Gotland	Uppsala	Ar Research Station	Marine biology field station	Marine Biology		p. 56
Sweden: Uppsala University	Uppsala	Uppsala University Coin Cabinet	Collection of more than 40,000 numismatic objects, i.e. coins, medals, tokens and banknotes, from across the world, from the inception of coinage to the present	Archaeology, Art History, Economic History, History	Digital Humanities	p. 57

UK: Durham University X-Ray Centre	Durham	X-Ray Crystallography in Extreme Environments Facility	Two unique single crystal X-ray diffractometers	Chemistry		p. 11
UK: Department of Earth Sciences, Durham University	Durham	Artificial Volcano	Equipment for investigating the processes of volcanic eruption	Earth Sciences		p. 12
UK: Department of Chemistry, Durham University	Durham	Ion Beam Facility in Materials Chemistry	MeV ion beam analysis facility	Chemistry		p. 13
UK: Durham University Geochemistry Centre	Durham	Northern Centre for Isotopic and Elemental Tracing	Facility for elemental analysis, radiogenic / stable isotope analysis, and geochronology / isotopic dating	Earth Sciences		p. 14
UK: Department of Archaeology, Durham University	Durham	Archaeological Services	Facility for ancient DNA analysis, geophysics, conservation, and environmental archaeology	Archaeology		p. 15
UK: Faculty of Science, Durham University	Durham	GJ Russell Microscopy Facility	Suite of scanning electron microscopes, transmission electron microscopes, and focused ion-beam microscopes	Physics		p. 16
UK: Durham University X-Ray Centre	Durham	X-Ray Computed Tomography Facility (XRCT)	Facility for investigating the internal microstructures of materials, down to the sub-micron level	Physics		p. 17
UK: Biophysical Sciences Institute, Durham University	Durham	Single Plane Illumination Microscope (SPIM) and Zebrafish Facility	Single Plane Illumination Microscope for recording high-resolution 3D images of biological systems	Biophysical Sciences		p. 18
UK: Durham World Heritage Site, Durham University	Durham	University Library Archives and Special Collections	Archives, early printed books and manuscripts		Arts and Humanities Research for the World	p. 19
UK: Durham University Library	Durham	Durham Palatinate Mint Coin Collection	Collection of 16th century coins from the Durham mint	Archaeology, English, Digital Humanities	Digital Humanities	p.20

UK: Department of Geography, Durham University	Durham	Remote and In-Situ Monitoring of Slopes	Equipment for scanning soil and rock slopes and for monitoring and analysing environmental processes acting upon rockfaces	Geography		p. 21
UK: Department of Earth Sciences, Durham University	Durham	Durham Terrestrial Laser Scanning Facility (DuTLS)	Centre for Earth Sciences applications of terrestrial laser scanning	Earth Sciences		p. 22
UK: James Cook University Hospital, Middlesbrough	Durham	MRI Scanning Facility	3-Tesla Siemens Magnetom Trio Whole Body MRI System	Psychology	Brain and Mind	p. 23
UK: Wolfson Research Institute, Durham University	Durham	Brain Stimulation Laboratories	Equipment for the application of transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (TDCS) and for neuro-navigation	Psychology	Brain and Mind	p. 24
UK: Department of Psychology and Wolfson Research Institute, Durham University	Durham	Psychophysical Experiment Laboratories	Equipment for psychophysical experiments	Psychology	Brain and Mind	p. 25
UK: Department of Psychology, Durham University	Durham	Motion-capture Laboratory	VICON body motion-capture and Optitrack facial motion-capture systems	Psychology	Brain and Mind	p. 26
USA: Erroll, New Hampshire	Dartmouth	Second College Grant	27,000 acres of woodland		Energy, Resources and Environment	p. 7
USA	Dartmouth	Dartmouth Organic Farm	Educational and working garden	Agriculture	Energy, Resources and Environment	p. 8

Institution:	Dartmouth College
Name of facility:	Second College Grant
Location of facility:	Erroll, New Hampshire, USA
Summary description:	27,000 acres of woodland
Discipline:	
Research theme	Energy, Resources & Environment
Weblink:	http://www.dartmouth.edu/~cpf/secondgrant/

Details:

Dartmouth College owns and manages 27,000 acres of woodland in the Northern Forest region of New Hampshire, near Erroll, New Hampshire and the Maine state line. This land, known as the Second College Grant or "the Grant", was given to the College by the State of New Hampshire in 1807. The Grant is characterized by a remote wilderness aesthetic, a diversity of habitat, and pristine waters. In 2007, the College celebrated the 200th anniversary of the Grant.

The Grant has long been used for timber harvesting and recreation, although recreation has only expanded more recently as the Grant became more accessible. Timber harvesting has been culturally and economically important to the region for hundreds of years, and the Grant provides income for Dartmouth College. The intent is for harvesting to continue, but in balance with other management goals, such as wilderness recreation, preservation of natural places and waters, and long-term sustainability.

Overall management at the Grant is governed by the [Grant Management Committee](#), which has created a Master Plan for the Grant. There is also a Forest Management Plan specifically for the management of timber harvesting. The Grant has received [Green Tag Certification](#), and is a member of the [American Tree Farm System](#).

The [Outdoor Programs Office](#), within the Dean of the College Division, is responsible for overseeing the cabins and recreational uses on the Grant.



Institution:	Dartmouth College
Name of facility:	Dartmouth Organic Farm
Location of facility:	USA
Summary description:	Educational and working garden
Discipline:	
Research theme	Energy, Resources & Environment
Weblink:	http://outdoors.dartmouth.edu/activities/facilities/organic_farm/

Details:

The Dartmouth Organic Farm is a student-run educational and working garden that provides members of the Dartmouth community with opportunities for independent research, student projects, and hands on experience in sustainable food and energy systems.

The very nature of an agricultural enterprise lies in the intersection of culture and the environment; to identify and respond to the needs of a society while recognizing the limits and demands of the immediate, local ecosystem. A farm is one of the last institutionalized vestiges of our direct connection to the natural world which surrounds and supports us. The Dartmouth Organic Farm serves to connect this rich interdisciplinary domain with the greater educational mission of Dartmouth College. The Farm performs as a living laboratory, providing hands-on, personal experiences of the workings of the natural world and challenging us to contemplate the impact of the human world we have created.



Photo by Sarah Hackney '06

Get Involved!

In the summer or fall, start by stopping by the **farmstand** outside of Collis, Thursdays from 11:00 am to 3:00 pm After you've had a chance to chat with others involved with the Farm (or if it's winter or spring), the easiest way to get involved is simply to **come on out** and see what you can do. If it's your first time, email the Farm at organic.farm@dartmouth.edu or call (603 643 5196) to see what folks are planning to be up to when you come out. It's a three mile drive, bike ride, or even river paddle, to the Farm. Rides can be arranged with reasonable notice.



Students interested in the Farm meet on campus each week to plan and direct the business of the Farm. Event planning, informational sessions, and weekly updates keep the farm program moving ahead. The Farm also has special work-days for beginners and potluck dinners out at the Farm.

For students who become more involved with the Farm's operation, there are full and part time intern positions, as well as the opportunity to live out at the Farm on off-terms or even while taking classes.

Institution:	Dartmouth College
Name of facility:	Southern African Large Telescope
Location of facility:	South African Astronomical Observatory, Northern Cape Province, South Africa
Summary description:	Largest single optical telescope in the southern hemisphere
Discipline:	Astronomy
Research theme	
Weblink:	http://www.dartmouth.edu/~astro/salt.html

Details:

Dartmouth College has a 10% share of the Southern African Large Telescope, which is currently being constructed in the Great Karoo desert in South Africa. When completed in mid-2005, Dartmouth faculty will be guaranteed access to 26 clear nights per year on the largest single telescope in the southern hemisphere. Further information on the telescope, instruments and detectors may be found on the [SALT home page](http://www.dartmouth.edu/~astro/salt.html).

Introduction

The Southern African Large Telescope (SALT) is the largest single optical telescope in the southern hemisphere and among the largest in the world. It has a hexagonal primary mirror array 11 metres across, comprising 91 individual 1.2m hexagonal mirrors. Although very similar to the Hobby-Eberly Telescope (HET) in Texas, SALT has a redesigned optical system resulting in a larger field of view and effective collecting area. SALT can detect the light from faint or distant objects in the Universe, a billion times too faint to be seen with the unaided eye - as faint as a candle flame would appear at the distance of the moon. The telescope and instruments are designed to operate from the near ultraviolet to the near infrared (320 to 1700 nm), and offer some unique or rare capabilities on a telescope of this size.

SALT is situated at the South African Astronomical Observatory (SAAO) field station near the small town of Sutherland, in the Northern Cape province, and is ~380 km from Cape Town. SALT is funded by a consortium of international [partners](#) from South Africa, the United States, Germany, Poland, India, the United Kingdom and New Zealand. The construction phase was completed at the end of 2005 and from 2006 to 2009 it entered a period of commissioning and performance verification. Since September 2011, observing is now in full swing and the telescope is finally realising its huge potential as Africa's Giant Eye on the Universe.



Institution:	Durham University
Name of facility:	X-Ray Crystallography in Extreme Environments Facility
Location of facility:	Durham University X-Ray Centre, UK
Summary description:	Two unique single crystal X-ray diffractometers
Discipline:	Chemistry
Research theme	
Weblink:	https://www.dur.ac.uk/xrdur/

Details:

Professor Judith Howard in the Department of Chemistry is happy to be contacted for further information on her X-ray Crystallography facility. In particular her group has expertise in X-ray diffraction techniques and in Variable Temperature X-ray crystallography. The facility is part of Durham University X-ray centre, information on which can be found at: <http://www.dur.ac.uk/xrdur/>.

The key major shared state-of-the-art instruments in the facility are:

- XIPHOS: A unique single crystal X-ray diffractometer designed and optimized for ultra-low temperature diffraction experiments using a 3-stage closed cycle cryorefrigerator (He) with a temperature range 2-290K. X-ray source is a high intensity (Mo) rotating anode TXS generator.
- XIPHOS II: The second unique single crystal X-ray diffractometer built with a Ag X-ray microsource and advanced optics, optimized for high pressure experiments using diamond anvil cells (DACs), range 0.5 to >100 kbar. New cells have been designed and commissioned for XIPHOS II. It is also possible to combine high pressure with low temperature in XIPHOS I.

In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk. Professor Howard can also be contacted for any enquiries via email at: j.a.k.howard@durham.ac.uk.

Institution:	Durham University
Name of facility:	Artificial Volcano
Location of facility:	Department of Earth Sciences, Durham University, UK
Summary description:	Equipment for investigating the processes of volcanic eruption
Discipline:	Earth Sciences
Research theme	
Weblink:	http://community.dur.ac.uk/ed.llewellyn/lbflow/index.htm
Details: <p>This is a stand-alone piece of equipment run by Dr Ed Llewellyn, which was recently used for a documentary on the physics of volcanic eruptions for National Geographic/Discovery Channel and Channel 5.</p> <p>Dr Llewellyn aims to understand physical processes that drive and control a volcanic eruption, using a variety of tools to address this question, including laboratory experiments, numerical simulations and field investigation.</p> <p>A lattice Boltzmann model, LBflow, is available for the numerical investigation of mesoscale fluid dynamic processes that is relevant to many areas of scientific and engineering research. The code is accurate, efficient and easy to use. It is also designed to be flexible and extensible, and could find application in a broad range of flow problems. Further details, including how to obtain the model, are available on Dr Llewellyn's pages: http://www.dur.ac.uk/ed.llewellyn/lbflow/index.htm. Dr Llewellyn may be contacted for any enquiries via email at: ed.llewellyn@durham.ac.uk.</p>	

Institution:	Durham University
Name of facility:	Ion Beam Facility in Materials Chemistry
Location of facility:	Department of Chemistry, Durham University, UK
Summary description:	MeV ion beam analysis facility
Discipline:	Chemistry
Research theme	
Weblink:	https://www.dur.ac.uk/chemistry/consultancy/ion_beam_analysis/

Details:

The service is run by Dr Richard Thompson and the department is unique in the UK in having an MeV ion beam analysis facility. The service supports the research programmes of many groups within the department in addition to both industrial and academic external users.

Equipment includes:

- A National Electrostatics Corporation (USA) 5SDH pelletron accelerator with a target station which is equipped with liquid nitrogen cooling
- Capability for Rutherford Backscattering, Elastic Backscattering, Elastic Recoil Detection Analysis, Particle Induced X-ray Emission and Nuclear Reaction Analysis

Ion beam analysis is a family of techniques that can be used to measure the elemental composition versus depth of almost any solid material. For many materials (particularly metals and alloys) the analysis is virtually nondestructive. The depth resolution is of the order of a few nanometers, and range of measurement can be tens of microns. Data acquisition is rapid (tens of minutes) and sample preparation is straightforward compared to most other

In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.

Institution:	Durham University
Name of facility:	Northern Centre for Isotopic and Elemental Tracing
Location of facility:	Durham University Geochemistry Centre, UK
Summary description:	Facility for elemental analysis, radiogenic / stable isotope analysis, and geochronology / isotopic dating
Discipline:	Earth Sciences
Research theme	
Weblink:	https://www.dur.ac.uk/resources/research/publicity/06609NorthernCentrelisotopicElemental.pdf

Details:

This facility offers a wide variety of analytical services, ranging from analysis of solids and liquids to isotope ratio measurements of environmental materials including water (O, C, H, Sm-Nd, Rb-Sr, Re-Os, Pb and LuHf for example).

Commonly analysed trace elements include the rare earth elements plus first and second row transition elements with matrices ranging from rocks to bird feathers.

A specialist low level platinum group element analytical service is also available using isotope dilution methods.

This facility also offers a geochronology/isotopic dating service employing the Sm-Nd, Rb-Sr, Lu-Hf and Re-Os systems in a variety of rocks and minerals.

Instrumentation includes:

- ICPMS plus a Neptune multi-collector instrument, ICP AES, TIMS gas source isotope ratio mass spectrometry, Los Gatos Research Laser liquid-water isotope analyser and a Costech elemental analyser.

In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.

Institution:	Durham University
Name of facility:	Archaeological Services
Location of facility:	Department of Archaeology, Durham University, UK
Summary description:	Facility for ancient DNA analysis, geophysics, conservation, and environmental archaeology
Discipline:	Archaeology
Research theme	
Weblink:	https://www.dur.ac.uk/archaeological.services/
Details: Archaeological Services at Durham University serves the development, environmental and heritage industries across the UK. Clients cover both the public and private sectors, and projects range from major road schemes to the conversion of farm buildings for modern use. A comprehensive and integrated range of in-house specialist services are available, including ancient DNA analysis, geophysics, conservation, and environmental archaeology. In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk or email archaeological.services@durham.ac.uk .	

Institution:	Durham University
Name of facility:	GJ Russell Microscopy Facility
Location of facility:	Faculty of Science, Durham University, UK
Summary description:	Suite of scanning electron microscopes, transmission electron microscopes, and focused ion-beam microscopes
Discipline:	Physics
Research theme	
Weblink:	https://www.dur.ac.uk/electron.microscopy/
<p>Details:</p> <p>The facility, run by Dr Budhika Mendis, provides electron microscopy services to five departments in the Faculty of Science at Durham University and to external users. Services provided include SEM and TEM for structural imaging and chemical analysis.</p> <p>Equipment includes:</p> <ul style="list-style-type: none"> • Hitachi analytical SU-70 FEG SEM, JEOL 2100F FEG TEM and FEI Helios Nanolab FIB alongside extensive specimen preparation facilities. <p>Training and data interpretation are provided by a team of dedicated on-site staff.</p> <p>See web pages for a selection of research projects and ongoing development work: https://www.dur.ac.uk/electron.microscopy/. There are also sample images from this facility: https://www.dur.ac.uk/electron.microscopy/facilities/gallery/.</p> <p>In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.</p>	

Institution:	Durham University
Name of facility:	X-Ray Computed Tomography Facility (XRCT)
Location of facility:	Durham University X-Ray Centre, UK
Summary description:	Facility for investigating the internal microstructures of materials, down to the sub-micron level
Discipline:	Physics
Research theme	
Weblink:	https://www.dur.ac.uk/xrdur/facilities/xrct/
Details: <p>Part of X-ray Durham (XRDur), launched in 2009, is a University approved research centre which operates across various areas of science which are reliant on X-ray techniques.</p> <p>Members are drawn from the Departments of Chemistry, Earth Science, Biological and Biomedical Science, Physics and Archaeology with interests in many areas of Xray science including: diffraction, trace element analysis, reflectometry, tomography, photoemission, small-angle scattering and EXAFS.</p> <p>These techniques are applied to research areas ranging from protein crystallography to condensed matter physics. X-ray Computed Tomography (XRCT) facility to be based in the School of Engineering and Computing Sciences. The new facility will allow researchers from a wide range of disciplines to investigate the internal microstructures of materials, down to the sub-micron level.</p> <p>The proposed XRCT machine run by Dr Charles Augarde will permit the non-destructive analysis of material samples up to 300mm cube size with no specialised preparation or environmental conditions necessary and is ideal for material with voids or those comprised of different density fractions.</p> <p>The facility will be used by researchers in engineering, earth science, physics & archaeology and also by colleagues from similar areas at Newcastle and Sheffield Universities, and collaborators from industry and academia are encouraged to get in touch.</p> <p>In the first instance, all enquiries should be sent to Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.</p>	

Institution:	Durham University
Name of facility:	Single Plane Illumination Microscope (SPIM) and Zebrafish Facility
Location of facility:	Biophysical Sciences Institute, Durham University, UK
Summary description:	Single Plane Illumination Microscope for recording high-resolution 3D images of biological systems
Discipline:	Biophysical Sciences
Research theme	
Weblink:	https://www.dur.ac.uk/bsi/technologies/spim/
Details: <p>Three-dimensional imaging is an important tool when studying developmental and functional biology. This kind of imaging is particularly difficult to perform effectively on moving structures like the beating heart. Professor John Girkin and colleagues have developed a real-time imaging system to acquire high-resolution three-dimensional images of the beating zebrafish heart without harmful exposure to excitation light. A forthcoming Single Plane Illumination Microscope will enable development of high-resolution imaging of biological systems. Linked to this will be a new Zebrafish facility, run by Professor Roy Quinlan.</p> <p>Single Plane Illumination Microscope (SPIM):</p> <ul style="list-style-type: none"> • Current excitation wavelength 488nm • Heart synchronisation via optical gating • Lateral resolution ~1 micron • Axial Resolution ~ 2 microns • Image rate up to 100 frames per second <p>All enquiries should be directed to Professor John Girkin in the first instance at j.m.girkin@durham.ac.uk.</p>	

Institution:	Durham University
Name of facility:	University Library Archives and Special Collections
Location of facility:	Durham World Heritage Site, Durham University, UK
Summary description:	Archives, early printed books and manuscripts
Discipline:	Humanities
Research theme	Arts and Humanities Research for the World, Digital Humanities
Weblink:	https://www.dur.ac.uk/library/asc/

Details:

Occupying recently refurbished library and conservation suites situated within the Durham World Heritage Site, which includes Durham Cathedral and Durham Castle, the University's [Palace Green Library](#) houses archives, manuscripts, early printed books, photographs, maps and films from a variety of historical periods. There are also various galleries where historical material can be viewed.

Durham University and Durham Cathedral are currently undertaking a project to digitise [Durham Priory Library](#). This project will re-unite the whole collection online, providing scholars with a unique opportunity to explore the concept of the medieval library and the life of a Benedictine priory, and enabling them to unlock significant research potential that could lead to notable publications, conferences and exhibitions.

The [Sudan Archive](#) contains personal and official papers relating to pre-independence Sudan (1898-1955) as well as a significant amount of Mahdist material and papers relating to the military campaigns of the 1880s and 1890s. Much of this collection has been digitised and work is ongoing.

[Ushaw College](#) holds very extensive collections, manuscript and printed, for recusant studies and the history of 18th-19th century Catholicism in England, especially in the North of England. It holds over 40,000 printed titles, the great majority pre-1851, including much rare pamphlet literature from the 16th-19th centuries. Online cataloging is in progress.

Use the 'search' facility at https://www.dur.ac.uk/library/asc/collection_information/catalogues/ to navigate to collections of particular interest throughout the museums of Durham City and Durham University, including the [Museum of Archaeology](#) and the [Oriental Museum](#).

Institution:	Durham University
Name of facility:	Durham Palatinate Mint Coin Collection
Location of facility:	Durham University Library, UK
Summary description:	Collection of 16th century coins from the Durham mint
Discipline:	Archaeology, English, Digital Humanities
Research theme	Digital Humanities
Weblink:	https://www.dur.ac.uk/library/asc/collection_information/cldload/?collno=47
Details: <p>The Durham Palatinate Mint Coin Collection is a collection of 59 coins from the Durham mint, from the time of Henry II to Bishop Tunstall (1530-59). The mint was located on Palace Green at a time when the unique Governance of the area allowed for the Prince Bishops to coin silver pennies and coins of smaller denominations.</p> <p>Additional collections of coins can be found in the Museum of Archaeology (Greek, Roman and British), https://www.dur.ac.uk/archaeology.museum/, and in the Oriental Museum (Ancient Egyptian and Asian), https://www.dur.ac.uk/oriental.museum/.</p>	

Institution:	Durham University
Name of facility:	Remote and In-Situ Monitoring of Slopes
Location of facility:	Department of Geography, Durham University, UK
Summary description:	Equipment for scanning soil and rock slopes and for monitoring and analysing environmental processes acting upon rockfaces
Discipline:	Geography
Research theme	
Weblink:	www.dur.ac.uk/resources/research/publicity/06609RemoteandinsituMonitoringofSlopes.pdf

Details:

Equipped to undertake routine or opportunistic scanning of soil and rock slopes, allowing characterisation of rock masses; measurement and analysis of change; evaluation of strain; and determination of potential areas of instability.

Also a bespoke system for monitoring and analysing environmental processes acting upon rockfaces, including temperature; precipitation; wind direction and velocity; solar insolation; etc. This system can also be used to monitor the response of a slope to environmental processes – for example by measuring crack widening, rock temperature and surface moisture. Also developed techniques to allow integration, analysis and visualisation of the resultant datasets. These techniques have been developed by the International Landslide Centre.

Equipment includes:

- Trimble GS200 terrestrial laser scanner
- MDL Quarryman terrestrial laser scanner
- Riegl LMS4201 terrestrial laser scanner
- International Landslide Centre rockface monitoring system

For further information, contact the service manager Professor David Petley at d.n.petley@durham.ac.uk or Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.

Institution:	Durham University
Name of facility:	Durham Terrestrial Laser Scanning Facility (DuTLS)
Location of facility:	Department of Earth Sciences, Durham University, UK
Summary description:	Centre for Earth Sciences applications of terrestrial laser scanning
Discipline:	Earth Sciences
Research theme	
Weblink:	https://www.dur.ac.uk/earth.sciences/facilities/dutls/

Details:

Established in 2006, Durham Terrestrial Laser Scanning facility (DuTLS) is an established centre of excellence for Earth Sciences applications of terrestrial laser scanning.

Department of Earth Sciences in collaboration with University spin-out company Geospatial Research Ltd, the facility underpins fundamental research into the use and application of laser scanning technologies in the Earth Sciences. DuTLS staff members possess a high-degree of expertise founded on well-developed collaborative partnerships with laser scanning and survey companies, industrial users and other academic groups.

Equipment Includes:

- A RIEGL LMS 420i - consist of a high performance long-range pulsed 3D scanner, associated operating and processing software, and a calibrated and definitively orientated high resolution digital camera.
- A LEICA C10 Scanstation - a pulsed, dual-axis compensated, very high speed laser scanner, with survey-grade accuracy, range, and field of-view; integrated camera and laser plummet. It has Onboard control an integrated hard drive for storage and an integrated high-resolution digital camera with zoom video.
- DuTLS has Trimble 5700 and 5800 Dual frequency GPS capable of real time kinematic acquisition, Ashtech Promark 2 & 3 survey GPS receivers and assorted GPS, handheld and tablet PCs that can be used for Digital field Mapping.

For further information, contact Dr Pamela Robinson (Analytical Services Coordinator) at analytical.services@durham.ac.uk.

Institution:	Durham University
Name of facility:	MRI Scanning Facility
Location of facility:	James Cook University Hospital, Middlesbrough, UK
Summary description:	3-Tesla Siemens Magnetom Trio Whole Body MRI System
Discipline:	Psychology
Research theme	Brain and Mind
Weblink:	http://www.dur.ac.uk/psychology/research/neuroimagingcentre/

Details:

This magnetic resonance imaging facility is based at the James Cook University Hospital in Middlesbrough. The scanner is a 3-Tesla Siemens Magnetom Trio Whole Body MRI System, with 32- and 12-channel head coils.

Peripheral equipment for running experiments includes:

- MR-safe LCD 'BOLDscreen' display monitor from Cambridge Research Systems;
- MKII Visual Stimulus Generator (ViSaGe) from Cambridge Research Systems for displaying calibrated computer-generated visual stimuli;
- MR-safe 'LiveTrack' infra-ye tracker from Cambridge Research Systems; a Magnacoustics high-definition auditory stimulus presentation system;
- Fibre Optic Button Response System from Psychology Software Tools;
- Turbo BrainVoyager software specialized for real-time fMRI data analysis and neuro-feedback applications.

There is also a MRI Simulator (mock scanner replicating 3T Siemens Magnetom Trio) from Psychology Software Tools, housed at the Department of Psychology, Durham.

For further information on this facility please see the Durham University Neuroimaging Centre website at <http://www.dur.ac.uk/psychology/research/neuroimagingcentre/>.

Institution:	Durham University
Name of facility:	Brain Stimulation Laboratories
Location of facility:	Wolfson Research Institute, Queen's Campus, Durham University, UK
Summary description:	Equipment for the application of transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (TDCS) and for neuro-navigation
Discipline:	Psychology
Research theme	Brain and Mind
Weblink:	https://www.dur.ac.uk/psychology/
Details: These laboratories include facilities and equipment for the application of transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (TDCS) and for neuro-navigation.	

Institution:	Durham University
Name of facility:	Psychophysical Experiment Laboratories
Location of facility:	Department of Psychology and Wolfson Research Institute (Queen's Campus), Durham University, UK
Summary description:	Equipment for psychophysical experiments
Discipline:	Psychology
Research theme	Brain and Mind
Weblink:	https://www.dur.ac.uk/psychology/
Details: These facilities include: visual display monitors; Visual Stimulus Generator (ViSaGe) systems from Cambridge Research Systems; eye-tracking equipment from Cambridge Research Systems, SensoMotoric Instruments (SMI) and SR Research; button boxes; and equipment for recording biophysiological responses as well as for the analysis of visuomotor action.	

Institution:	Durham University
Name of facility:	Motion-capture Laboratory
Location of facility:	Department of Psychology, Durham University, UK
Summary description:	VICON body motion-capture and Optitrack facial motion-capture systems
Discipline:	Psychology
Research theme	Brain and Mind
Weblink:	https://www.dur.ac.uk/psychology/
Details: This laboratory is fitted with the latest VICON body motion-capture and Optitrack facial motion-capture systems.	

Institution:	Queen's University
Name of facility:	Queen's University Biological Station
Location of facility:	Lake Opinicon, Ontario, Canada
Summary description:	Field station for research and study in ecology, evolution, conservation and environmental biology
Discipline:	Biology, Environmental Science, Geology, Geography
Research theme	
Weblink:	http://www.queensu.ca/qubs/home

Details:

The Queen's University Biological Station (QUBS) is one of the premier scientific field stations in North America. For more than 60 years, researchers and students have gathered at QUBS to conduct research and participate in courses spanning ecology, evolution, conservation and environmental biology.



The Queen's University Biological Station is centred on the shores of Lake Opinicon, one of the lakes of the Rideau Canal, some 50 km north of Kingston, Ontario, Canada.

The main facility consists of some 32 buildings, including the Operations Centre (pictured below), a library, conference rooms, 12 separate laboratory areas, a workshop, an aquarium house and a variety of accommodation, ranging from one person sleeping cabins to large cottages and dormitory space. The Operations Centre includes year round kitchen and dining room, washrooms, conference room/classroom, administrative offices, computer rooms, a technical lab, storage areas, laundry and an interpretive area. Although several of the Station's buildings are original, dating back to the late 1940's, others have been added to provide comfortable accommodations for up to 80 people. The Station now boasts a fleet of boats, reference collections, audio-visual equipment, computer rooms, and optical and electronic equipment, including an automated weather station.



Astride the Frontenac Axis (an extension of the Canadian Shield into the sedimentary rocks that surround the Great Lakes Basin), QUBS provides access to a wide variety of habitats. Lakes of various types and sizes are close by. So, too, are landscapes with a range of human influence and alteration, a varied topography, specialized environments, and high biodiversity. The area offers a fascinating juxtaposition of northern and southern flora and fauna.

A series of real estate purchases and gifts to Queen's have expanded the facility to more than 3000 hectares, including six small lakes and extensive shoreline on Lake Opinicon and Hart Lake, and habitats ranging from abandoned farmland to mature second-growth forest. In the face of continuing development, these additions have provided crucial long-term security for study sites. For many species of plants and animals, especially those with large home ranges or particular requirements, the conservation value of the QUBS property is substantial.

From the beginning the station has had a dual mandate -- teaching and research. In the early years, students served as research assistants, and received training in field biology while working for various professors on established studies. This type of training continues today. But as often as not, students now work on their own projects. They do field work as part of the requirements for an advanced degree -- an Honours BSc, Master's, or Doctorate. For these students, the distinction between research, teaching, and training often becomes fuzzy. We are expanding that mandate to include an active outreach component to engage students of all levels, public through high school, and the public at large, in outdoor and nature activities.



Part of the success of QUBS is the admixture of researchers from a variety of institutions. On a regular basis, the field station hosts researchers from a spectrum of universities including Queen's, Carleton U. (Ottawa), U. of Toronto (both St. George and Erindale), Illinois Natural History Survey (Champaign, Ill.), Ithaca College (Ithaca, N.Y.), University of Western Ontario (UWO), and the University of Windsor. In addition, international researchers also make use of QUBS. The interaction between researchers from various universities, pursuing myriad research questions, makes the field station a lively, challenging and interesting place to conduct field work.

For inquiries and bookings please contact:

Dr Stephen Lougheed

QUBS Director and Professor, Biology & Environmental Studies, Queen's University

E-mail: stephen.lougheed@queensu.ca

Institution:	Queen's University
Name of facility:	Innovation Park
Location of facility:	Kingston, Ontario, Canada
Summary description:	Technology development hub
Discipline:	Sciences, Engineering
Research theme	Energy, Resources & Environment
Weblink:	http://www.innovationpark.ca/
Details: <p>Innovation Park at Queen's University is a community of innovators and specialists where academia, industry, government and not-for-profits work together to cultivate ideas, identify and transform important technological discoveries, and propel innovations into the marketplace.</p> <p>The role of Innovation Park is to foster interaction among the participants in the research and innovation system and thus stimulate commercialization and economic development in the South Eastern Ontario region.</p> <p>With support from the provincial government, announced in the 2007 budget, and with Queen's University as the catalyst, Innovation Park has emerged as a technology development hub and an important vehicle that is helping to drive and accelerate university-industry interaction, create vibrant research and innovation forums, and facilitate business retention, growth and attraction.</p>	

Institution:	Queen's University
Name of facility:	Sudbury Neutrino Observatory (SNOLab)
Location of facility:	Sudbury, Ontario, Canada
Summary description:	Underground laboratory for astroparticle physics (primarily neutrinos and dark matter)
Discipline:	Physics, Astronomy
Research theme	
Weblink:	http://www.snolab.ca
Details: <p>SNOLAB is an underground science laboratory specializing in neutrino and dark matter physics. Located 2 km below the surface in the Vale Creighton Mine located near Sudbury, Ontario, Canada, SNOLAB is an expansion of the existing facilities constructed for the Sudbury Neutrino Observatory (SNO) solar neutrino experiment. SNOLAB follows on the important achievements in neutrino physics achieved by SNO and other underground physics measurements. The primary scientific emphasis at SNOLAB will be on astroparticle physics with the principal topics being:</p> <ul style="list-style-type: none"> • Low Energy Solar Neutrinos • Neutrinoless Double Beta Decay • Cosmic Dark Matter Searches • Supernova Neutrino Searches 	

Institution:	Queen's University
Name of facility:	Mass Spectrometry and Proteomics Unit
Location of facility:	Department of Chemistry, Queen's University, Canada
Summary description:	Mass spectrometry services and expertise for the analysis of small and macromolecules, proteins and enzyme
Discipline:	Chemistry
Research theme	
Weblink:	http://www.chem.queensu.ca/facilities/mass-spectrometry
Details: <p>The Queen's Mass Spectrometry Facility currently consists of four mass spectrometers, a Thermo Fisher Orbitrap Velos Pro with an electrospray ionization (ESI), heated-electrospray ionization (HESI), or EASY-nLC nanospray ionization (NSI) probe, an Applied Biosystems Qstar XL QqTOF mass spectrometer with matrix assisted laser desorption ionization (MALDI) source and electrospray ionization source (ESI), a GC-TOF mass spectrometer and a single quadrupole ZQ-LC/MS mass spectrometer. The daily operation of the unit is overseen by the MS facility manager, Dr Jiaxi Wang. This facility provides MS services and expertise for the analysis of small and macromolecules, proteins and enzymes to both users in the Queen's community and from other institutions and industry. The current users of this facility include Queen's researchers from Biology, Biochemistry, Cell Biology, Chemistry, Chemical Engineering, Geological Sciences, Immunology, Pharmacology, Microbiology, Pathology and Molecular Medicine, and a large number of researchers from various industries and other universities.</p>	

Institution:	Queen's University
Name of facility:	Queen's Facility for Isotope Research
Location of facility:	Department of Geological Sciences and Geological Engineering, Queen's University, Canada
Summary description:	Isotopic analysis of elements extracted from carbonates, silicates, sulfates, sulfides, phosphates, waters and organic matter
Discipline:	Geological Sciences, Geological Engineering
Research theme	
Weblink:	http://www.queensu.ca/geol/qfir
Details: <p>The Stable Isotope and ICP/MS Lab at Queen's University offers isotopic analysis of elements extracted from carbonates, silicates, sulfates, sulfides, phosphates, waters and organic matter.</p> <p>The lab was established at Queen's University in 1997 under the direction of Dr T.K. Kyser. It functions as both a hands-on teaching lab for students in the Department of Geological Sciences and Geological Engineering, and as a state-of-the-art research facility housing some of the most technologically advanced equipment in Canada.</p>	

Institution:	Queen's University
Name of facility:	Coin Collection of the Department of Classics and Department of Art History & Art Conservation
Location of facility:	Queen's University
Summary description:	Over 600 coins from the Diniacopoulos Collection of Antiquities
Discipline:	Archaeology, Art Conservation, Art History, Economic History, Social History
Research theme	Digital Humanities
Weblink:	http://www.queensu.ca/classics/diniacopoulos-collection
<p>Details:</p> <p>In 2001, Queen's Department of Classics and the Art Conservation Program bought a large number of artifacts from the Diniacopoulos Collection, put together by Vincent and Olga Diniacopoulos in the early 20th century. Soon after World War II the Diniacopoulos moved with their son Denis to Montreal taking with them their collection of antiquities. Following the deaths of Vincent and Denis, most of the collection went up for sale and was acquired by international museums and institutions. Ancient masterpieces from the Diniacopoulos family collection can today be viewed in the British Museum, the Louvre, the Royal Ontario Museum, and the Montreal Museum of Fine Arts.</p> <p>The collection was acquired by Queen's for educational purposes, so that students from the Department of Classics (BA and MA) could study and research ancient artefacts while students from Art Conservation (MA) could conduct research on materials composition, manufacturing techniques, old restoration and cleaning methods, and perform conservation treatments according to current standards of practice.</p> <p>Among the pieces acquired in 2001 are 627 Greek and Roman coins, a good part of which have not been identified and studied yet. The Department of Classics and the Art Conservation Program with the help of their students have recently started to study, conserve, and digitize the coins. Archaeometric analyses are also in progress.</p> <p>The range of types and time periods represented in the collection make the coins a valuable research tool for archaeologists, historians, classicists, ancient art historians, and art conservators.</p> <p>Enquiries: Cristiana Zaccagnino (zaccagn@queensu.ca); Amandina Anastassiades (amandina.anastassiades@queensu.ca)</p>	

Institution:	University of Otago
Name of facility:	University of Otago House
Location of facility:	National University of Samoa, Apia, Samoa
Summary description:	Accommodation for academics conducting research in Samoa
Discipline:	
Research theme	
Weblink:	http://www.otago.ac.nz/international/otago004502.html#NUS_house

Details:

The primary function of the house is as accommodation for academics conducting approved research either in collaboration with National University of Samoa faculty or in Samoa generally. It will also be made available to other University staff on official business either with NUS or the Samoan Government.

The University of Otago house is situated on the NUS campus. User Fees are NZ\$25 per person per night, NZ\$80 per person per week, Group Rate: NZ\$125 per week. The house contains two twin bedrooms, two bathrooms, a full kitchen, lounge, dining area, laundry and an Office with 2 desks. It is fully furnished and designed to comfortably accommodate up to 4 people.

For further information, email: international.visits@otago.ac.nz.



Institution:	University of Otago
Name of facility:	RV Polaris 2
Location of facility:	Dunedin, New Zealand
Summary description:	Vessel for teaching, research and commercial activities
Discipline:	Marine Science, Geology, Oceanography, Antarctic Studies, Climate Change
Research theme	Energy, Resources and Environment
Weblink:	http://www.otago.ac.nz/marinescience/about/facilities/researchvessels.html

Details:

The RV Polaris II is available for teaching, research and commercial activities. The vessel is operated by the Department of Marine Science on behalf of the Division of Sciences.

- **Range** - 1,000 nautical miles, 30+ days between NZ subantarctic and subtropical islands
- **Running costs** - between \$600 and \$5,000 per day depending on user and nature of activities
- **Accommodation** - 16 in 6 cabins, kitchen & mess, 2 toilets & showers, drying room, underway wet & dry lab, seminar / teaching, workroom, large deck



Institution:	University of Otago
Name of facility:	Beryl Brewin
Location of facility:	Dunedin, New Zealand
Summary description:	Short range boat
Discipline:	Marine Science, Geology, Oceanography, Climate Change, Environmental studies
Research theme	
Weblink:	http://www.otago.ac.nz/marinescience/about/facilities/researchvessels.html

Details:

A short range boat that can carry up to 20 people in enclosed waters such as Otago Harbour, and up to eight people during coastal work outside of the harbour. With a four-berth cabin, kitchen and dining facility, she can also handle overnight stays with up to four including the skipper. The vessel is equipped with a diving platform, and also has hydraulic systems to enable light equipment to be deployed. It is also capable of light-dredging work.

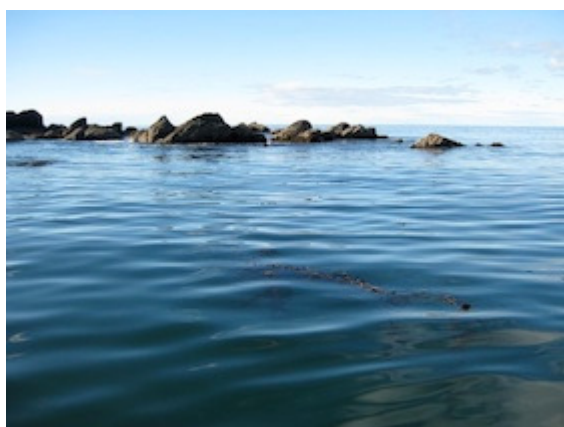


Institution:	University of Otago
Name of facility:	Stewart Island Field Station
Location of facility:	Oban, Stewart Island, New Zealand
Summary description:	Accommodation and laboratory space
Discipline:	Geography, Ecology, Marine Studies, Botany, Environmental Biology, Conservation
Research theme	
Weblink:	http://www.otago.ac.nz/marinescience/about/facilities/researchstations.html

Details:

Located at Oban, Stewart Island (250Km south of Dunedin), the Marine Studies Department manages the accommodation (up to 15 people) and small laboratory space. It has a wet workroom space as well as accommodation for 12 people. Overflow accommodation for more people can be arranged nearby. Access to the island is via a public ferry operated by Real Journeys from Bluff.

The RV Naiad is stationed here and can be used as a research platform in Paterson Inlet, Foveaux Strait and beyond.



Institution:	University of Otago
Name of facility:	Portobello Marine Laboratory
Location of facility:	Portobello Peninsula, Otago, New Zealand
Summary description:	Fish hatchery, research laboratory and aquarium
Discipline:	Aquaculture, Zoology, Ecology, Conservation, Environmental Biology
Research theme	
Weblink:	http://www.otago.ac.nz/marinescience/about/facilities/otago045221.html

Details:

The Portobello Marine Laboratory was first established in 1904 as a fish hatchery. Since that time laboratory developments have seen this grow to a busy research laboratory, with an attached Marine Studies Centre and Aquarium. The New Zealand Marine Studies Centre offers marine education programmes for schools and the general public as well as housing marine research, teaching and office spaces and laboratory facilities. The Centre holds an Aquarium (currently being refurbished) with 100 different types of fish.



Institution:	University of Tübingen
Name of facility:	Tübingen Research Station in the Brazilian Araucaria Forest
Location of facility:	Pró-Mata, Rio Grande do Sul, Brazil
Summary description:	Field station in araucaria forest
Discipline:	
Research theme	
Weblink:	http://www3.pucrs.br/portal/page/portal/ima/Home/promata

Details:

The University of Tübingen established together with its Brazilian partner university PUCRS from Porto Alegre a field station in the Pró-Mata area in 1996. Around 180 km from Porto Alegre, the station is located some 50 km from São Francisco de Paula. Room for about 45 students and teachers exist as well as laboratories, teaching and seminar room.



The partner relation between PUCRS and the University of Tübingen started more than 30 years ago. Together with the Tübingen partner university, the University of Applied Forest Sciences Rottenburg, methods were elaborated to reforest devastated areas with *Araucaria angustifolia*.

Every year students from Tübingen and Rottenburg realize practical training of up to 6 months at the field station. More than 100 diploma, master and doctoral thesis were elaborated in Pró-Mata since 1996.

Projects:

- Reforestation of a highly endangered subtropical rainforest ecosystem, originally covering large areas of the Southern Mata Atlântica (1997-2001)
- Monitoring of the fauna of the Serra Geral close to Pró-Mata, 2002-06
- Field Guides of the Pró-Mata area, since 2002
- Amphibians of Rio Grande do Sul, since 2009
- Ecogenetics of *Araucaria* – root – fungus – systems, since 2011
- Cyanobacteria associated with Bryophyta of Araucarian Forest, 2013



Since 2002 every year a 3 week field class in geoecology is realized in the nature reserve Pró-Mata by Dr Rainer Radtke from the Brasilien-Zentrum and the Faculty of Science, Tübingen University. Tübingen students together with students of Brazilian partner universities get to know the Araucaria ecosystem.

Contact:

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Institution:	University of Tübingen
Name of facility:	Centre de Recherches Médicales de Lambaréné
Location of facility:	Lambaréné, Gabon
Summary description:	Clinical, epidemiological and basic research facilities associated with the Albert Schweitzer Hospital in Lambaréné, Gabon
Discipline:	Medicine, Biology, Infectiology, Vaccinology, Human Parasitology, Tropical Medicine, Basic Research, Clinical Research, Microbiology, Parasitology
Research theme	
Weblink:	www.cermel.org/

Details:



The partner site of the Institute of Tropical Medicine Tübingen, the ***Centre de Recherches Médicales de Lambaréné (CERMEL)***, is located in the Moyen-Ogooue region of Gabon, a 4 hour-car ride in southern direction from the capital city Libreville, next to the Ogooue river.

The first research laboratory was established at the Albert Schweitzer Hospital in Lambaréné in 1981. Renamed “*Unité de Recherche Médicale*” or “*Medical Research Unit*” in 2001, the centre became administratively and financially independent from the Albert Schweitzer Hospital, while retaining close links to the hospital. The name of the centre was changed in 2011 to CERMEL, and in 2014, CERMEL expanded into the “*Centre Hospitalier Universitaire*” (CHU) de Lambaréné. CERMEL has become a leading African Research Centre, specialising in pathophysiology and the treatment of highly prevalent infectious diseases occurring in sub-Saharan Africa.

The site in Gabon has a track record of more than 20 years of fruitful collaboration with the Institute for Tropical Medicine in Tübingen. More than 100 clinical trials have been performed under this collaboration, mainly antimalarial interventions. Research traditionally focused on malaria, but in recent years has expanded into tuberculosis and other neglected tropical diseases (bacteria, viruses, schistosomiasis and other helminthiasis). Research activities at CERMEL concentrate on the following major areas of interest: evaluation of new drugs and vaccine candidates, pathophysiology of infectious diseases and epidemiological studies. Research is performed in five standard laboratories providing excellent services for patient care, and participants in clinical trials and research projects – these laboratories are organised into Basic Research, Clinical Research, Microbiology, Parasitology, and Tuberculosis.

Exchange of research staff between the sites has been an elementary part of this collaboration from the very start and will even be extended in the future. Medical and biological students as well as young professionals like medical doctors or Post Docs are invited to perform parts of their practical studies at CERMEL or gain expertise in working as research physicians within the scope of clinical trials in an endemic area.

Institution:	University of Tübingen
Name of facility:	Center for Light-Matter-Interaction, Sensors and Analytics (Core Facility LISA ⁺)
Location of facility:	University of Tübingen, Germany
Summary description:	Nanostructure Laboratory for thin film deposition, micro- and nano-patterning, thin film / surface analysis and laser microscopy / spectroscopy
Discipline:	Physics, Chemistry, Nanosciences, Material Science and related disciplines
Research theme:	Quantum Science
Weblink:	http://www.lisaplus.uni-tuebingen.de/

Details:

The Core Facility LISA⁺ (Center for Light-Matter Interaction, Sensors and Analytics) is a research and service facility for the natural sciences at the University of Tübingen. LISA⁺ was founded in 2011 as a result of close collaborations between groups in physics and chemistry in order to run the central multidisciplinary nano-structure and nano-analysis laboratory. In 2012 the center became a University of Tübingen core facility. The nano-structure laboratory offers a broad variety of methods for nano-fabrication and nano-analysis, including standard techniques for sample preparation and characterization as well as unique research instrumentation.



Photography: University of Tübingen / Jörg Jäger

LISA⁺ uses advances in structuring, manipulation and analysis down to the atomic scale for new developments in the areas of collective quantum phenomena, nano-photonics, and sensors. Amongst others, new measurement techniques based on optical or quantum effects are developed.

LISA⁺ offers its services to users both within and outside the University of Tübingen, including the MNU partners. The service can encompass either access to the clean room area and instrumentation, or the implementation of scientific collaborations or service orders in the areas of micro- and nano-structuring, surface analysis and microscopy. The LISA⁺ Instrument Scientists are available for advice on technical and scientific questions and for establishing connections with the respective experts.

Available facilities:

- **Thin film deposition:** UHV thin film cluster system, deposition system with effusion cells, LPCVD, PECVD, electron beam and thermal evaporation, sputter-coating, spin-coating, diffusion ovens
- **Micro- and nano-structuring:** Focused electron beam, Ga-, He- and Ne-ion beam, optical and nanoimprint lithography, EBID/IBID, argon ion milling, UHV plasma and reactive ion etching, O₂ ashing
- **Thin film and surface analysis:** UHV-STM, AFM, scanning Auger microscopy, SEM with EDX and EBSD, X-ray diffractometry, RBS, XPS, FTIR, UV/vis spectroscopy, ellipsometry, mass spectrometry, micro-profilometry, contact angle measurements, 4-probe station, helium-neon-ion-microscopy

- **Laser-scanning microscopy and ultra-fast lasers:** confocal / near-field / UHV low-temperature scanning microscopy, fs-spectroscopy, life-cell imaging and plasmonics, single molecule detection

Contact: Dr Ronny Löffler and Dr Markus Turad at info@lisaplus.uni-tuebingen.de.

Institution:	University of Tübingen
Name of facility:	Quantitative Biology Center (QBiC)
Location of facility:	University of Tübingen, Germany
Summary description:	Interdisciplinary facility supporting modern high-throughput, data-driven research in the life sciences, from the experimental design, to the omics data generation to data analysis and archiving
Discipline:	Genomics, Transcriptomics, Proteomics, Metabolomics, Bioinformatics
Research theme:	
Weblink:	http://www.uni-tuebingen.de/en/facilities/zentrale-einrichtungen/quantitative-biology-center-qbic.html

Details:

The Quantitative Biology Center (QBiC) is an interdisciplinary core facility of the University of Tübingen and the Max Planck Institute for Developmental Biology. QBiC provides convenient access to state-of-the-art high-throughput technologies: next-generation sequencing (NGS) for genomics and transcriptomics, mass spectrometry for metabolomics and proteomics.

Additionally, we offer coherent bioinformatic solutions for data processing, analysis and archiving. QBiC is the central bioinformatics core facility and provides a full range of services from the consultation of experiments to the analysis of the resulting data.

Multi-omics experiments are becoming the focus in many biomedical studies. We develop methods to efficiently integrate and visualize these big data from multi-omics experiments

Through the involvement of established facilities and research labs in the areas of NGS, proteomics and metabolomics as QBiC member labs, QBiC provides a single point of entry for large-scale quantitative studies. All services are integrated in a single web-based user interface. QBiC offers consultation prior to the experiment to ensure sufficient statistical power of the data and to select the optimal experimental method for your purpose. QBiC co-workers, skilled bioinformaticians, will support the project from its conception to the interpretation of the entire study.

Institution:	University of Tübingen
Name of facility:	eScience-Center
Location of facility:	University of Tübingen, Germany
Summary description:	Center providing the infrastructure necessary to promote efficient and sustainable use of digital research methods in the Humanities
Discipline:	Humanities
Research theme:	Digital Humanities
Weblink:	http://www.uni-tuebingen.de/en/facilities/informations-kommunikations-und-medienzentrum-ikm/e-science-center.html

Details:

The e-Science Center is part of the University's Center for Information, Communication, and Media (IKM) and provides the infrastructure necessary to promote efficient and sustainable use of digital research methods, particularly in the Humanities and Social Sciences. Initial projects are being set up with a wide range of subjects from more than 15 different departments. A strong focus of the center's efforts lies in the support of major collaborative research centers and research training groups.

Data management and archiving platform

We expect that in the next decade we will see sustainable data storage emerge to become one of the major responsibilities of universities and research institutions. To address this growing need, one of the core directives of the eScience Center is the development and maintenance of a standardized and sustainable digital archive system for primary research data. The development of precise definitions for essential metadata that work within a standard schema is crucial for creating reusable datasets that will be available over long periods of time. Therefore, the eScience Center works closely with users to recommend digital methods that are appropriate to specific research projects, identify new digital directions for their research, develop data customized management plans, and describe metadata-schemes. The digital archive system should be operational for all projects in fall 2016.

The center is responsible for maintaining the archive infrastructure, the stored data throughout the life of the data, following the recommendations of the Open Archival Information system. In addition, the center supports new research projects through the development and establishment of data management plans and metadata schemes.

Digital Humanities studymodule

In addition to the development and maintenance of a digital infrastructure, the eScience Center is responsible for the "Digital Humanities" study program, funded by the state of Baden-Württemberg. The program focuses on teaching technologies that can be applied to a wide range of research directions within the Humanities. The eScience Center offers both introductory and advanced courses in digital humanities with an emphasis on the technologies of digital text edition and computer applications in archaeology.

Research

As a third focus, the eScience Center is available to consult on new and ongoing projects to help to select and develop digital tools and strategies that enhance research. The eScience Center was instrumental in the selection and evaluation of appropriate technologies for a number of archaeological field projects that included GPS-based mapping, aerial photography from UAVs and image processing. Research projects can

also be developed within the eScience center, mainly with a focus on spatial technologies in humanities, such as the “Digital Euting Project” which connects a digital text edition of historic journals with a geoinformation system (<http://www.escience.uni-tuebingen.de/projekte/julius-eutings-tagebuecher.html>).



Institution:	University of Tübingen
Name of facility:	Coin Collection of the Institute of Classical Archaeology
Location of facility:	University of Tübingen, Germany
Summary description:	Collection of over 20,000 objects from the ancient world to modern times, including coins, medals, banknotes, casts and electrotypes
Discipline:	Archaeology, Art History, Economic History, History, Anthropology
Research theme	Digital Humanities
Weblink:	https://www.unimuseum.uni-tuebingen.de/de/sammlungen/muenzsammlung-der-klassischen-archaeologie.html

Details:

With over 20,000 objects, the coin collection of the Institute of Classical Archaeology at the University of Tübingen is one of the largest and most important university collections of ancient coins in Germany; it is also one of the oldest as its history spans more than 200 years. The collection's most prized specimens, in addition to some other c. 800 coins, are on permanent display in the Ancient Civilizations gallery at the Tübingen University Museum (MUT, Ancient Cultures) to expound the history of coinage from its origins in the seventh century BC to the present day.

The collection was founded in 1798 by Carl Sigmund Tux (1715-1798), a senior civil servant (Regierungsrat) at the ducal court of Württemberg. His bequest also formed the initial core of today's famous Greek and Roman collections at Tübingen University Museum.

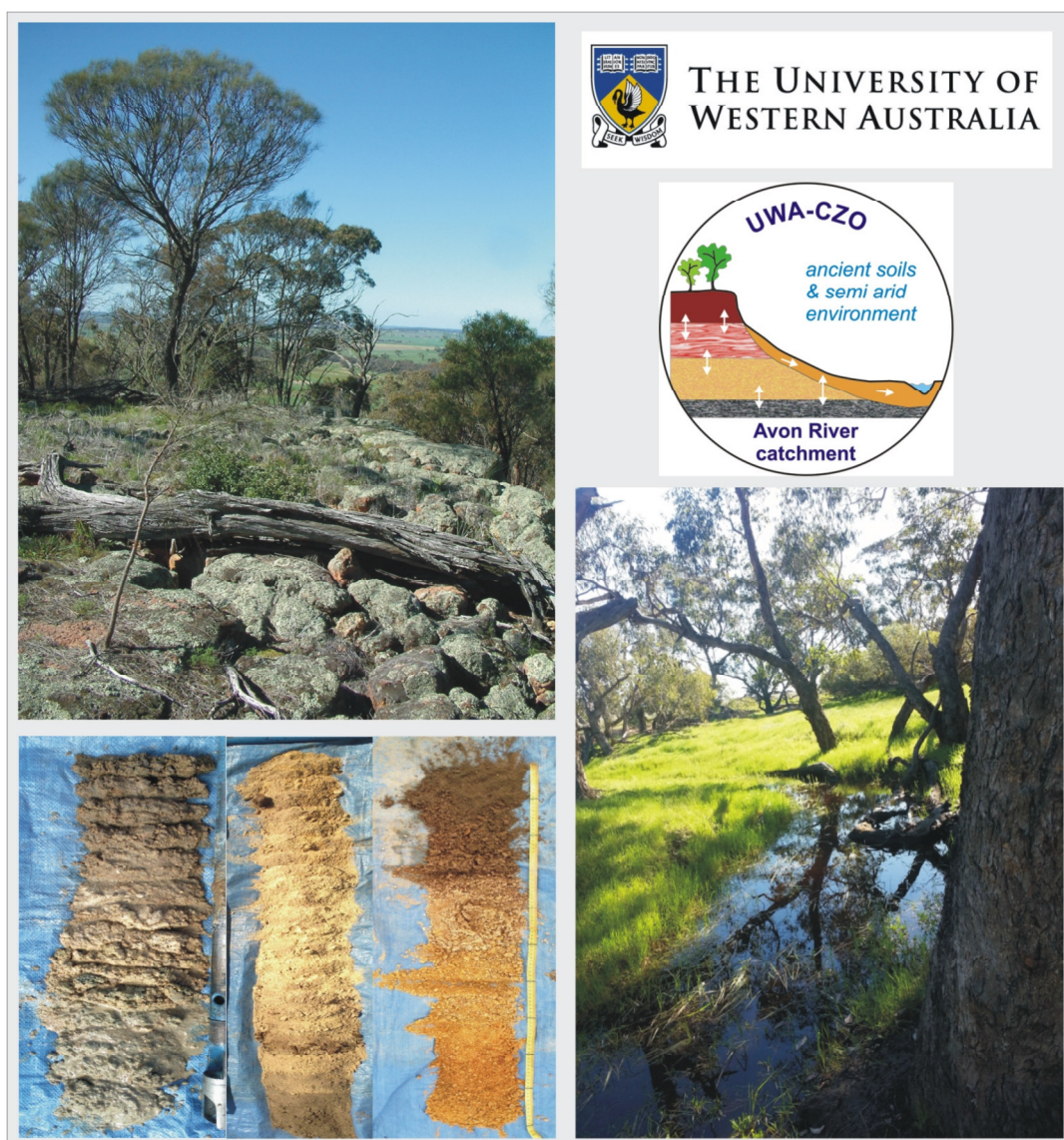
As the coin collection was conceived of as a broad-based teaching and learning aid, its breadth of coverage outweighs its chronological or typological focus and thus makes the collection a particularly suitable research facility for archaeologists, historians, classicists, art historians, and anthropologists within the Matariki Network of Universities.

Today the collection consists of c. 8,000 Greek and 6,000 Roman coins, 2,000 medieval and early modern coins, as well as 3,000 medals and casts and electrotypes. Through publications, exhibitions and other educational events, the collection promotes the study of ancient numismatics to diverse audiences. Attached to the collection is the Numismatic Department (Numismatische Arbeitsstelle) at the Institute of Classical Archaeology with its rich library, underlining Tübingen's unique role in German academia as a centre for research, teaching, and public outreach in ancient numismatics through its university museum coin collection.



Institution:	University of Western Australia
Name of facility:	UWA Future Farm 2050
Location of facility:	West Pingelly, Western Australia, Australia
Summary description:	1500 hectare farm developing a profitable mixed-enterprise operation
Discipline:	Agriculture, restoration ecology
Research theme	
Weblink:	http://www.ioa.uwa.edu.au/future-farm-2050

Details:



Mission: facilitate local, national and international multidisciplinary research into future farming systems

National profile: one of four national demonstration sites for reduction of emissions from livestock.

International goal: a world-wide network of future farms in a range of socio-economic and geographical regions.

Why 2050?

By 2050 we will have to feed 50% more people without destroying the planet

Who are we?

In the Shanghai Jiao Tong Ranking of World Universities 2013, UWA's discipline of *agricultural and life sciences* is ranked at #26 in the world and #1 in Australia. *UWA Future Farm 2050* celebrates our commitment to national and international leadership.

Where is the UWA Future Farm and how big is it?

The property, also referred to as "*Ridgefield*", consists of 1500 hectares situated on Page Road, West Pingelly, Western Australia; Google Earth: S 32° 30' 23" – E 116° 59' 31"

What happens on the UWA Future Farm?

Primary goal: Profitability while demonstrating of state-of-the-art farm practice

Three enterprises: animal production, crop production, ecosystem restoration.

Planned management of soil, carbon, water, self-sufficiency for electricity and water

Training: undergraduate and postgraduate students

Sheep production – 'Clean, green and ethical'

Clean – less hormones, drugs and chemicals

Green – minimize environmental impact, especially greenhouse gas production

Ethical – maximize animal welfare

Crop production (wheat, canola)

Minimum tillage – conserve soil structure, water

Weed management – less dependent on herbicides, adaptation to climate change, Integrated pest management

Ecosystem restoration

Non-profitable areas – restore native ecosystem, contribute to conservation of Australian biodiversity

Who else is involved in UWA Future Farm 2050?

UWA Faculty of Architecture, Landscape & Visual Arts: design of buildings, landscaping

UWA Faculty of Engineering, Computing & Mathematics: solar power, water management

Institution:	Uppsala University
Name of facility:	Klubban Biological Station
Location of facility:	Gullmarsfjorden, Sweden
Summary description:	Marine biology field station with boats
Discipline:	Marine Science
Research theme	
Weblink:	http://www.klubban.ibg.uu.se/?languageId=1

Details:

Klubban Biological Station, situated by Gullmarsfjorden on the west coast of Sweden, was founded in 1915, emanating from a donation to Uppsala University to promote research and education in marine biology. The original building has been enlarged several times since then and today the station is a modern service institution with broad biological emphases. The station is open to researchers and courses of all nationalities.

Gullmarsfjorden is Sweden's only true fjord, comprised of a shallow entrance and a deep central fjord basin. The fjord contains a multitude of marine habitats and is an ideal place for marine studies and research. As a result, no less than four marine stations are situated in the area.

At a walking distance from Klubban there is a beautiful beech forest, in the spring blooming with wood anemone (*Anemone nemorosa*) and the light greenery from the trees. There is also a park for breeding threatened animals from all over the world, Nordens ark, 45 minutes away by car. And in Lysekil, just across the Fjord, which is easily accessible by ferry, you find Havets hus, the largest sea aquarium in the Nordic countries.



The Station building has room for 10 researchers/teachers, and in adjacent buildings for additionally 40 students and guests. The fully equipped kitchens provide good possibilities for self-catering. A sauna is available for residents at the Station. Nearby Lysekil has all the urban services that might be needed.

The station has a lecture room for about 35 students, with TV, video recorder, TV-camera connected to stereo- and ordinary microscope, overhead and slide projector, a small computer room, equipped with modern Computers (PC/Windows) and a laser printer. The Internet is reached by a permanent broadband connection.

The station is equipped with basic laboratory devices and marine sampling equipment. A regular freezer (-18°) and two temperature rooms, + 4° and +15°, provide good storage possibilities. Several aquaria rooms connected to salt water pipes pumping water from 3 and 38 meters allow good opportunities for keeping and experimentally studying marine organisms. The activity room with simulated day-night conditions also provide possibilities for experimental work. Organisms for research can be provided by the staff at the Station, upon enquiry.



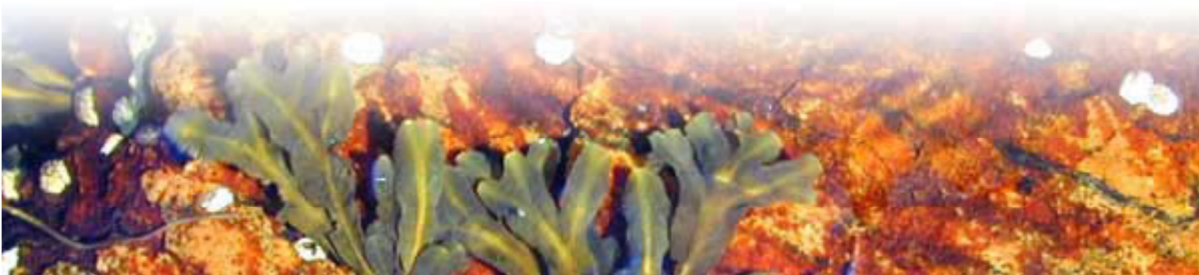
Our trawler, Belone, taking 34 passengers, is equipped for marine sampling purposes. One minor vessel, Maja takes 8 people. There are also two smaller motor boats, as well as three rowing boats. A company car and two bicycles are also available.

For inquiries and bookings please contact:

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Institution:	Uppsala University
Name of facility:	Erken Laboratory
Location of facility:	Lake Erken, Sweden
Summary description:	Aquatic ecology laboratory
Discipline:	Evolutionary Biology
Research theme	
Weblink:	http://www.ebc.uu.se/Research/IEG/erken/?languageId=1

Details:

The field station is a part of the Department of Limnology at the Evolutionary Biology Centre of Uppsala University. It has since its foundation in the 1940s served both as a research station and a Study and course centre. During the early years, activities were mostly restricted to the summer season, but now courses and other activities take place all year round. The Erken laboratory has developed an extensive environmental monitoring program for Lake Erken. The laboratory is situated at the south-east shore of the lake, 65 km east of Uppsala.

Erken Laboratory takes part in a number of different research projects and networks. The main research interests are:

- Long term monitoring of water quality
- Climatic effects on aquatic systems
- Nutrients cycling in lakes
- Flow of phosphorus between sediment and water

At the Erken Laboratory courses are offered all year, educating everyone from small pre school children to researchers. The aim is to increase the common knowledge within aquatic ecology, a sustainable way of life and interest in natural sciences.



There are several different accommodations at the Erken Laboratory. In the Main building there are 12 rooms with, in total, 35 beds, 1 apartment with 2 beds, a student kitchen, a course kitchen, a dining room and a TV-room. There are 51 beds in other small houses/cottages which are mainly used during spring/summer/autumn. There is one lecture hall and one outdoor educational facility, each with room for 35 persons.

For inquiries and bookings please contact:

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Institution:	Uppsala University
Name of facility:	Ar Research Station
Location of facility:	Ar, Island of Gotland, Sweden
Summary description:	Marine biology station
Discipline:	Marine Biology
Research theme	
Weblink:	http://www.campusgotland.uu.se/en/ar/
Details: Ar Research Station is one of Uppsala University's biological research stations, situated in the northern part of the island of Gotland, on a narrow isthmus between the freshwater Lake Bästeträsk and the Baltic Sea. The station is small and pleasant to work in, and offers considerable opportunities for both research and teaching, as well as meetings and small-scale conferences. Its unique location between a freshwater lake and the sea offers superb conditions for both freshwater and brackish water studies.	

Institution:	Uppsala University
Name of facility:	Uppsala University Coin Cabinet
Location of facility:	Uppsala University
Summary description:	Collection of more than 40,000 numismatic objects, i.e. coins, medals, tokens and banknotes, from across the world, from the inception of coinage to the present
Discipline:	Archaeology, Art History, Economics, Economic History, History, History of Ideas, History of Science, Legal History, Linguistics, Philosophy, Social History, Social Science
Research theme	Digital Humanities
Weblink:	http://www.coincabinet.uu.se/en/?languageId=1

Details:

The Uppsala University Coin Cabinet is one of Sweden's greatest coin and medal collections. It is located in the [University Main Building](#). The history of the collection goes back to the 17th century.

Coins and medals class with the first objects, which came with the [Augsburg Art Cabinet](#) donated to the university in 1694. Following that, the collections have grown and now include coins and medals from the whole world and coins dating back to the inception of coinage some 2600 years ago.

In total, the collection comprises close to 40,000 objects. The collection is above all about rare and unusually well preserved Swedish coins and medals. Through its privileged position the university has retained Royal medals and other medals, which have then been preserved, almost entirely untouched, in the collections. A great many of the coins and medals are unique, both those which were minted in Sweden and those which were minted for Sweden during its Era of Great Power in the Swedish possessions.

Added to this is a fine collection of Plate money, including several intrinsically rare items.

An exhibition of a selection of these remarkable objects has been arranged in the University Main Building. In addition, there are two showcases of ancient Greek and Roman coins in the [Museum Gustavianum](#).

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