

The Programme

Saturday 23 July – arrive at Manchester, check in student dormitory.

Sunday 24 July- Orientation, social activity with Manchester students

Mon 25 July to Fri 29 July

Week 1: General & Medical Microbiology
Profile:



Dr Nicky High

<http://www.ls.manchester.ac.uk/people/profile/?alias=highn&view=research>

Dr. High is a leading scientist in the area of microbiology in relation to medicine and disease. Her particular interests focus on *Haemophilus influenzae* (one of the etiological agents of bacterial meningitis) and *Helicobacter pylori* (which causes gastric ulcers). Funded by the Wellcome Trust, her group use molecular genetic techniques to understand the key factors determining the virulence of the above microorganisms.

Description of the practical:

To introduce students to laboratory techniques in microbiology for studying bacteria.

Students will learn how to isolate, grow and analyze halophilic bacteria or other potential food-poisoning microorganisms from various sources e.g. fish skin, salami, soil and milk.

Mon 1 Aug- Fri 5 Aug

Week 2: Physiology
Dr Tristan Pocock



Profile:

<http://www.ls.manchester.ac.uk/people/profile/?alias=pocockt&view=biography>

Dr. Pocock is a Lecturer and has an excellent teaching track record. He has delivered teaching for medical and nursing students, coordinated the 2nd year Student-selected Component (SSC) and neuroanatomy course, delivered practical classes for medical, dental, pharmacy, nursing and life science students lectured in all areas of Pharmacology. He has been made an honorary EBL fellow by the Centre of Excellence for Enquiry Based Learning (CEEBL).

Description of the practical:

To provide the opportunity for students to perform human volunteer practicals, an exercise mini-project and to study cell physiological methods. Students will be allocated a mini-

research project on an aspect of the human response to exercise. Students will spend a minimum of 2 experimental days working on this project. Further days will be devoted to: studying solute transport across the gut epithelium, investigating the effects of changes in motor nerve stimulus parameters on skeletal muscle contraction using the frog sciatic-gastrocnemius preparation; examining physiological CAL simulations of electrophysiological techniques, and determining the control of ventilation by changes in blood gas concentrations.

Mon 8 Aug- Fri 12 Aug

Week 3: Clinical Sciences/ Clinical Pathology

Dr Tracey Speake



Profile:

<http://www.ls.manchester.ac.uk/people/profile/?alias=speaket&view=biography>

Dr Tracey Speake completed her Ph.D. in Physiology (1997) at the University of Manchester. She is extensively involved in the delivery and design of undergraduate courses for medical, dental, nursing and life science students. Her main educational interests lie in developing students' team working and reflective skills. Working with scholars in Manchester, she has jointly produced a successful Teamwork Induction Programme to assist academic staff in developing team working skills of their undergraduate students.

Description of the practical:

Students will be provided with a number of tumour tissue samples requiring diagnosis. Students will be required to (i) research and design the diagnostic protocol; (ii) conduct the experiments on the sections; and (iii) diagnose the tumours. Techniques include preparation of experimental solutions and tissue sections, histology in the diagnosis of tumours, immunohistochemistry, data interpretation.

Mon 12 Aug- Fri 19 Aug

Week 4: Biochemistry

Profile:



Dr Hui Lu

<http://www.ls.manchester.ac.uk/people/profile/?alias=luh&view=biography>

Dr. Lu obtained her PhD in Oxford University and held a prestigious Royal Society Research Fellowship. She is a Lecturer at the University. Her research interest is to understand the process of the mitochondrial protein biogenesis, and functional mechanisms of some key enzymes or proteins involved in this process in health and disease.

Description of the practical:

Carry out a kinetic analysis on a purified enzyme.

Students are required to use mass spectrometry, affinity chromatography and other analytical techniques to characterize the enzymatic functions of a purified protein. This unit includes the analysis and calculation of affinity, inhibitory effects, V_m and K_i , etc.

Afternoon of Fri 19 August

Poster presentation/ competition!

Award of completion letter

Wrap up – social event, farewell with Manchester students

Sat/ Sun 20, 21 August

Free activities, or join optional trips to other parts of UK (fee not included)

Four-week schedule

July-August 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						23 Arrival
24 Orientation/Social	25 AM: seminar PM: Intro to topic	26 RSM 1 Whole day	27 AM: RSM 1 PM: sports/city trip	28 RSM 1 Whole day	29 RSM 1 Whole day	30 Optional Trip/ Tour

31	1	2	3	4	5	6
Optional Trip/ Tour	AM: seminar PM: Intro to topic	RSM 2 Whole day	AM: RSM 2 PM: sports/cit y trip	RSM 2 Whole day	RSM 1 Whole day	Optiona l Trip/ Tour
7	8	9	10	11	12	13
Optional Trip/ Tour	AM: seminar PM: Intro to topic	RSM 3 Whole day	AM: RSM 3 PM: sports/cit y trip	RSM 3 Whole day	RSM 3 Whole day	Optiona l Trip/ Tour
14	15	16	17	18	19	20
Optional Trip/ Tour	AM: seminar PM: Intro to topic	RSM 4 Whole day	AM: RSM 4 PM: sports/cit y trip	RSM 4 Whole day	Poster/ Awards / Farewe ll social	Return

Appendix 1: Further information

Info for accommodation (including pictures)

<https://www.sanctuary-students.com/denmark-road>

Introduction to the University of Manchester

We are the largest single-site university in the UK, with the biggest student community. In total, 25 Nobel Prize winners have worked or studied here.

83% of our research was ranked as 'world-leading' or 'internationally excellent' by the [Research Excellence Framework](#) in 2014.

And more than nine out of ten of our recent graduates go straight into employment or continued studies.

We are ranked 30th in the world in the 2015 QS university ranking.

What's more, we are well underway with the biggest investment in facilities undertaken by any UK university, with £750 million spent so far and a further £1 billion to follow by 2022.

Info for our Faculty (including picture)

<http://www.ls.manchester.ac.uk/aboutus/>

Introduction to the Faculty of Life Sciences

Our Faculty ranks 4th in the UK for research power. (Research Excellence Framework 2014)

Research

The Faculty of Life Sciences is a world-class research establishment, recognised as an international site of excellence in terms of research power and importance in the latest Research Assessment Exercise.

Facilities

Over 28,000m² of research space, including:

- the AV Hill building, a £39 million research facility for neuroscience and immunology;
- the Michael Smith Building, a £62million research facility for molecular cell biology;
- the Manchester Interdisciplinary Biocentre, a £39million centre that focuses on research at the interface between biology and the physical sciences;

- the Core Technology Facility, a £27 million facility in which young businesses work alongside University research groups.

Higher learning

Our students benefit from modern facilities, innovative teaching techniques, and the opportunity to be taught by leading experts from across the breadth of the life sciences. The exceptional educational experience we offer is demonstrated by our success in the latest National Student Survey.

Staff and Student Numbers

- Undergraduate Students ~ 2000
- Postgraduate Students ~ 425
- Academic Staff ~ 250
- Professional Support Staff ~ 300

Social responsibility

The Faculty is committed to increasing the positive impact we have on our environment and communities and we have a team dedicated to support the University goals within this area.
