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| **Schedule of activities – CPU summer school**  **Students will meet at HW 113/114 where they will be collected by the lead member of staff. This will be your referral point for your time at Strathclyde.**   * **Classes normally start at 9:00 and end at 5:00 (with the exception of the English classes on the 18th & 19th which end at 5.30pm)** * **There is a comfort break every day from 10:00 – 10:30** * **Refreshments can be bought at various locations on campus and consumed in the various social areas** * **Lunches are served at 12:00 (venues detailed below).** * **Afternoon sessions start at 2:00** | | | | | |
|  | 9:00-11.45 | Learning objective | 2:00:500 | Learning objective | Staff involved |
| Lunch Venue |  | | | | |
| Mon 8th July | Welcome 9:00-10:00, Safety 10:30- 11:30 (HW113/114)  Campus tour 11:30 -12:00 | Familiarisation with UoS and laboratory safety | Visit to library 2:00-3:00, **English language class 3:00-5:00 - students allocated groupings (HW323 & HW324 & HW113)** | Accessing literature (library  English language and critical reading | Annette Sorensen (campus tour) Lorraine Allan (safety) Library (Lorna Gilkison | Research & Learning Support | Andersonian Library) Ben Brown/ Gemma Archer (English) |
| Tue 9th July | Immunology  Laboratory | Understanding how a Biological procedure unit operates and how to determine the numbers of parasites in a sample. | Immunology  Workshop activity  **English language class 3:30-5:30 - students allocated groupings (HW323 & HW324)** | Presentation skills of scientific data from selected papers  English language and critical reading | Linda Horan  Chris Carter  Catherine Lawrence  Ben Brown/ Gemma Archer (English) |
| Wed 10th July | Immunology  Laboratory | Understanding the role of the immune system in conferring immunity to parasitic infection: discussions. | Immunology  Workshop activity  **English language class 3:30-5:30 - students allocated groupings (HW323 & HW324)** | Critical appraisal of scientific data: paper interpretation: Immunity to parasites:  English language and critical reading | C Lawrence  C Carter  Ben Brown/Gemma Archer (English |
| Thur 11th July | Pharmacy | To understand: NHS and Pharmacy infrastructure, MPharm undergraduate teaching  Herbal Medicines use in UK | Practical Session in dispensary | To understand: How to label medicines and dispense medication against a prescription | Ian Towle Plus Ann Mitchell |
| Fri 12th July | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday |
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| Lunch Venue |  | | | | |
| Mon 15th July | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday | Glasgow local Holiday |
| Tue 16th July | Physicochemical properties (DGW) | Understand and appreciate ionisation and lipophilicity of drug molecules and how this affects their properties. | Chromatography (DGW) | Understand what chromatography is.  Appreciate the basic principles of high performance liquid chromate-graphy (HPLC), in particular reversed-phase chromatography.  Understand the basics of electrospray LC-MS | Dave Watson |
| Wed 17th July | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants. | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants | Dave Watson |
| Thur 18th July | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants. | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants. | Dave Watson |
| Fri 19th July | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants. | LC/MS lab (DGW) | Understand and apply how chromate-graphic techniques can be used to analyse paracetamol in tablets and how LC-MS can be used to identify degradants. | Dave Watson |
| Sun 21st July | 10am Stirling Castle Ross Priory, | Stirling Castle, Ross Priory, Loch Lomond | Stirling Castle, Ross Priory, Loch Lomond | BBQ Ross Priory | BBQ Ross Priory |
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| Lunch Venue |  | | | | |
| Mon 22th July | **Pharmacy**  Series of presentations on: | To understand:  Clinical Pharmacy and extended role of pharmacist  Student presentations on herbal medicine | Practical Session in dispensary | To understand: How to check blood pressure  Apply evidence to managing patients with hypertension | Ian Towle and Ann Mitchell |
| Tue 23rd July | Practical Session in dispensary | To use Simman and other tools to understand management of cardiovascular and respiratory conditions  To learn and Medicines Recon | Practical Session in dispensary | Understand  concept of accuracy checking of prescriptions and use of communication skills to educate patients | Ian Towle, Pernille Sorensen and Louise Evans |
| Wed 24th July | Highland trip 8am-8pm |  |  |  |  |
| Thur 25th July | **Biochemistry**  3rd year enzyme kinetics lab | 3rd year enzyme kinetics lab | Luke Chamberlain  3rd year enzyme kinetics lab analysis and discussion | Understand enzyme kinetics and data analysis | Luke Chamberlain |
| Fri 26th July | **Biochemistry (lab)**  Green Fluorescent Protein:  1.Make a 3D model of GFP  2.Streak out GFP cells on agar plates  3. Determine the results of complex interactions of fluorescent proteins in cells. | The understanding that molecular tools such as GFP can make an enormous contribution to the scientific understanding of biological processes. | **Biochemistry**  Lorenzo’s oil film and quiz  Can I get the cal lab? | Understanding the link between a genetic condition and its therapy. | Ben Pickard |
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| Lunch Venue |  | | | | |
| Mon 29th July | Cancer biology  Lecture/tutorial | Understand the principles of cancer, how and why it occurs, what it looks like and how its treated | Cancer workshop  Students in groups develop their own campaign and present to the whole class. Cancer quiz | Develop and critically appraise cancer prevention advertising campaigns. | Marie Boyd  Annette Sorensen |
| Tue 30th July | 9:00-9:05 Introduction to the day and the team  9:05-9:30  What is Industrial Biotechnology and why is it important?  9:30-10:30  IB in Scotland  11:00-11:30  Careers in IB  11:30-12:30  Guest Industry lecture | Understanding Industrial Biotechnology | 14:00-15:45  Three workshops:  •YSI demo  •Meet the students  •RBPC tour | Instrument set up in a separate (larger) lab. Short demos by Russell at YSI  Meet the students: Three interns in a booked room giving short presentation of their route to IB, how they got there and why with rooms for Q&A  RBPC Tour: Tour of IBioIC with short demos on some kit that is currently working. | Rachael Moir |
| Wed 31th July | Pharmacology  Pharmacology lecture  9:00- 10:00  10:30 – 12:30 (Cal lab – GPI simulation) | Understand the principles of pharmacology and the construction of CRC with and without an antagonist | Pharmacology  In vitro laboratory  (2:00 -3:00) Lecture – Lab preparation  (3:00- 5:00) In lab | In Vitro Pharmacology  Calculate EC50s | EGR |
| Thurs 1st Aug | CPU Student presentations (what they enjoyed and learned) | Presentation and communication skills | CPU Student presentations  (what they enjoyed and learned) | Presentation and communication skills | EGR – all staff welcome |
| Fri 2nd Aug | Graduate from Summer School (individual certificates) |  |  |  |  |

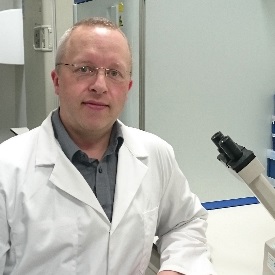
**Below are the images of some of the staff that are involved in the summer school.**

** Prof Robin Plevin (Head of Institute)**

 **Dr Catherine Lawrence (Parasitology)**

 **Dr Edward Rowan (Pharmacology)**

 **Prof Craig Roberts (Immunology)**

 **Dr Ben Pickard (Biochemistry)**

**Dr Chris Carter (Parasitology)**

**Dr Marie Boyd (Cancer research)**

 **Dr David Watson (Analytical Chemistry)**

** Dr Annette Sorensen**