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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**
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|  | 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. | ImmunologyWorkshop activity**English language class 3:30-5:30 - students allocated groupings (HW323 & HW324)** | Presentation skills of scientific data from selected papersEnglish language and critical reading | Linda Horan Chris CarterCatherine LawrenceBen Brown/ Gemma Archer (English) |
| Wed 10th July | ImmunologyLaboratory  | Understanding the role of the immune system in conferring immunity to parasitic infection: discussions. | ImmunologyWorkshop 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 LawrenceC CarterBen 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 pharmacistStudent presentations on herbal medicine | Practical Session in dispensary | To understand: How to check blood pressureApply 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 conditionsTo 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 Chamberlain3rd 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 GFP2.Streak out GFP cells on agar plates3. 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 quizCan 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 workshopStudents in groups develop their own campaign and present to the whole class. Cancer quiz |  Develop and critically appraise cancer prevention advertising campaigns. | Marie BoydAnnette Sorensen |
| Tue 30th July |  9:00-9:05 Introduction to the day and the team9:05-9:30 What is Industrial Biotechnology and why is it important? 9:30-10:30IB in Scotland11:00-11:30Careers in IB 11:30-12:30Guest Industry lecture |  Understanding Industrial Biotechnology  | 14:00-15:45Three workshops:•YSI demo •Meet the students•RBPC tour | Instrument set up in a separate (larger) lab. Short demos by Russell at YSIMeet 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&ARBPC Tour: Tour of IBioIC with short demos on some kit that is currently working. | Rachael Moir |
| Wed 31th July | Pharmacology Pharmacology lecture 9:00- 10:0010:30 – 12:30 (Cal lab – GPI simulation)  | Understand the principles of pharmacology and the construction of CRC with and without an antagonist | PharmacologyIn vitro laboratory (2:00 -3:00) Lecture – Lab preparation(3:00- 5:00) In lab  | In Vitro PharmacologyCalculate 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**