Neuroscience and Mental Health (NMH) BSc 2016/17

• Broad outline: objectives & course content
• In course assessments
• Projects
• Key dates
• Contacts
Course Objectives

Provide an in-depth understanding of how the brain works from the molecular and cellular level, through development of complex systems and pathways in man. **INTRODUCTORY MODULE and MODULE 1**

Analyse the causes of neurological and mental health disorders using a multidisciplinary approach (genetics, neuropathology, cellular and in vivo models, neurological and psychiatry disability and treatment) **MODULES 2 and 3.**
An example of a cellular model of disease

Cells expressing normal VAPB (wild-type) **GREEN**
With no abnormal ubiquitinated proteins **RED**

Cell expressing pathological mutation that causes Motor Neurone disease VAPB\(^{P56S}\)
Introductory Course and 3 Modules

Research Project = 2 modules

Specialist courses = 2 modules

Revision and exams

Write up and Presentations

Final examination Board
MODULES

• Introductory course
  Monday 26th September

• Cellular and developmental Neurobiology
  Monday 10th October

• Neurological and Psychiatric disorders
  Monday 14th November

• Aetiology and treatments of Mental Disorders
  Tuesday 3rd January
INTRODUCTORY COURSE

Professor de Belleroche

• Neuroanatomy refresher
• Signalling in the nervous system
• Clinical Neuroscience on the front line
  Neurology, Neuroradiology, Neurosurgery and Neuropathology
• Psychotic illness
• Psychiatry Research methodology and treatments
INTRODUCTORY COURSE

- Scientific literature and critical assessment
- Data handling and statistics
- Time management
- Presentation skills
- How to write about medical research for a lay audience (See ICA)
- Plagiarism avoidance
- Refworks: a refresher
- How to excel in exams

Generic skills and ICA
In course assessment

• Write a summary of a research publication for a lay audience (maximum 500 words).
• This is an ESSENTIAL component of this module.
• To be introduced in “Communicating Neuroscience” on 26th September at 4pm.
Cellular and developmental Neurobiology

Dr Amin Hajitou and Dr Simone Di Giovanni

- Cell types in the nervous system
- Neural tube development and neurogenesis
- Axonal growth and guidance
- Axonal damage and regeneration strategies
- Disorders of the developing NS
- CNS tumours and therapeutic targeting
- Neural stem cells
- Pain: molecules, circuits and analgesics
- Laboratory project: experimental design, data analysis and interpretation
Neurological and Psychiatric disorders

- Parkinson’s disease
- Epilepsy
- Motor neurone disease
- Multiple sclerosis
- Stroke
- Dementia
- Alzheimer’s disease

Prof Dexter and Dr Sastre
Aetiology and treatments of Mental Disorders

• Clinical Trials
• Schizophrenia
• Personality disorder
• Eating disorders
• Mental Health services
• Alcohol and drug misuse
• Neuroimaging
• Psychosocial interventions

Dr Paul Ramchandani and Dr Anna Need
Modules 1-3: Format and in course assessments (ICAs)

- Two ICAs per module accounting for 30% of marks for each module:
  - (i) An essay (2,500 words excluding abstract, legends and abstract).
  - (ii) Either a practical write-up, research paper, case history or critical analysis.
- Feedback (Either at the end of the module or in the following module)
Examinations

- Modules finish Friday 3\textsuperscript{rd} February 2017
- Revision
- Papers 1, 2 and 3
- 3 x 3 h Examinations (week commencing 20\textsuperscript{th} February - tbc)
In depth understanding of specific topics

**Part A:** Answer one essay question (out of 3) 40% 75 min
Compare and contrast the gross and cellular pathology of disease in the white and grey matter of the brain and discuss the pathological mechanisms involved

Analysis and interpretation of data

**Part B:** Answer all data interpretation questions 30%

Breadth of understanding

**Part C:** Answer 3 SAQs 30% 45 min
Research projects/ Specialist courses

• **Laboratory based** (stem cell therapy, anti-oxidant treatment in a model of Parkinson’s disease, neuroprotection in nerve injury)

• **Clinical** (immunohistochemistry of astrocytomas, in vivo imaging associated with appetite, evaluation of cerebellar volume during gestation by MRI, PET in temporal lobe epilepsy, visuo-spatial working memory)

• **Mental health** (creativity and mental distress, reducing drug misuse, risk assessment for violent patients)
RESEARCH PROJECTS
27th February – 26th May
including Easter Break

• Project lists to be circulated during the first module with guidance (BB Learn)
• Short list of preferred projects following discussion with supervisors
• Student selection of projects preferences late November and final allocation early December
• **Project submission** tbc ~26th May 2017 (1pm)
  - NO late submission
• **Project presentations** tbc ~22nd - 24th May
SPECIALIST COURSES

27th February – 26th May 2017

including Easter Break

12th to 19th April

Mini project submission 16th May tbc
(No late submission)

Project presentations 22nd – 26th May
DEADLINES for handing in ICAs and Projects

These are absolute deadlines and no marks will be given for late submission. However you are able to and **should** submit early drafts once the portals are open to avoid this penalty. These drafts are automatically overwritten by each new version.

If you log onto the submission portal before the deadline and encounter a technical hitch, immediately email a pdf of your work to **s.rainbird@imperial.ac.uk** explaining the problem.
Year 4 prizes

Malcolm Morris Memorial Prize

Best student in Neuroscience & Mental Health

Charles Power Prize
Best overall performance in BSc (1\textsuperscript{st})

Ester Seifert Prize
Best overall performance in BSc (2\textsuperscript{nd})

Waller Prize
Best overall performance in BSc (3\textsuperscript{rd})

Dudley Prize
Best Overall Performance in Part B

Evelyn de Rothschild Prize
Best BSc Project (1\textsuperscript{st})

Hepburn Memorial Prize
Best BSc Project (2\textsuperscript{nd})

Sir William Broadbent Prize
Best BSc Project (3\textsuperscript{rd})
CONTACTS

• Course Directors (j.belleroche@imperial.ac.uk and d.dexter@imperial.ac.uk, )
• Module Organisers and Lecturers,
• Project supervisors
• Personal Tutors
• Student representatives (nominations to j.belleroche@imperial.ac.uk by 30th September).
• ICSMSU Academic Officer (Science Years) – student welfare, student voice, enhancing the learning experience.
• FEO s.rainbird@imperial.ac.uk,
• Course Administrator o.thomas@imperial.ac.uk
Check BB Learn for timetables and course material
BSc in Neuroscience & Mental Health

BSc Social

Tentative date: 21\textsuperscript{st} October

Any clashes??