LF312-15 Contemporary Research Topics in Neuroscience

26/27

Department
Life Sciences
Level
Undergraduate Level 3
Module leader
Bruno Frenguelli
Credit value
15
Module duration
10 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module is designed to provide students with a broader perspective of contemporary and cutting-edge neuroscience research. Initially in collaboration with the University of Bordeaux, we shall deliver a Y3 module based around research seminars from neuroscientists at the Universities of Warwick and Bordeaux, both of which have excellent and complementary neuroscience research programs. The rationale behind this joint module is to: i) expose students at both institutions to contemporary neuroscience research not found at their own institutions, ii) provide an opportunity to interact with students in another institution to achieve a common goal (a poster presentation), and iii) provide an additional form of assessment in the writing of a research proposal, which, along with the group poster presentation mark, form the final mark for the module.

Module aims

To deliver research-led teaching by experts from two Neuroscience groupings
To provide students with appreciation of neuroscience research
To provide students with an opportunity to collaborate with their peers in an internationally renowned centre of excellence to achieve a common goal

To give students experience, through an exchange, of the creation and presentation of a scientific poster
To provide an opportunity to create a research proposal as a form of assessment.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module will consist of specialist research presentations delivered by local and external experts in the field across a wide range of topics such as: Synaptic plasticity, super-resolution microscopy, basal ganglia network, dopamine, post-traumatic stress disorder (PTSD); learning & memory, pain, inflammation, neuropeptides, stroke, epilepsy, and chemosensing. These research-level seminars will be supplemented with an associated workshop to explain and explore the topics in detail to provide high level and deep understanding. From these topics, students will conduct self-directed research and: a) in collaboration with their external counterparts, present a poster on this topic b) formulate a research proposal to extend the work they have researched.

The assessment of the poster presentation and research proposal will constitute the final marks for the module.

Learning outcomes

By the end of the module, students should be able to:

- Subject knowledge and understanding: Critically evaluate and discuss contemporary research topics in neuroscience, demonstrating informed engagement with current debates alongside researchers at a leading research institute.
- Key Skills: Synthesise and integrate learning to collaboratively design and produce a scholarly poster presentation with peers at an external institution.
- Key Skills: Communicate complex scientific ideas effectively by presenting a poster at a virtual, student-led conference, engaging with peers at an international university.
- Cognitive Skills: Independently formulate a coherent and feasible research proposal that extends and builds upon work presented during the module.
- Subject-Specific Skills: Critically assimilate and apply specialist knowledge to discuss, evaluate, present, and extend advanced topics in contemporary neuroscience, demonstrating intellectual independence and scholarly insight.

International

Exchange program, initially with Neuroscience colleagues at the University of Bordeaux https://www.bordeaux-neurocampus.fr

We view the international nature of the exchange to be of great value as it will expose our students to additional research not based at our own institutions, and through the opportunity for our students to work with their international counterparts to deliver a scientific presentation.

Subject specific skills

Reading of the contemporary neuroscience literature as it pertains to topics covered in the research seminars/tutorials
Synthesis of material into a cohesive poster presentation
Dialogue/interaction with local and international counterparts to arrive at a poster
Presentation of poster and dissemination of neuroscience research information
Engaging in subject-specific dialogue with international experts in the field
Reading, formulating and writing of neuroscience research proposal

Transferable skills

Attendance, attentiveness, focus and engagement during research presentations and associated workshop with local and external academics.
Reading, critiquing and synthesis of material into a cohesive poster presentation
Virtual and F2F teamworking with local and external students to achieve common goal (a poster presentation)
Developing a concept, sourcing, assimilating and critiquing information relevant to this concept for a research proposal
Formulating a credible and achievable research proposal information in a concise manner.

Study

Study time

Type	Required
Seminars	8 sessions of 2 hours (11%)
Tutorials	2 sessions of 2 hours (3%)
Other activity	15 minutes (0%)
Private study	59 hours 45 minutes (39%)
Assessment	70 hours (47%)
Total	150 hours

Private study description

Reading of papers associated with lectures
liaising with colleagues to create poster
creation of poster

Other activity description

Presentation of a poster to include time for Q&A on content

Costs

Category	Description	Funded by	Cost to student
Field trips, placements and study abroad	When an in-person event, the group presentation conference will take place at Warwick in some years and at the partner institution in other years. When participation in this module involves travel to the partner institution, the department or partner will cover: the standard fare costs of transport from campus to campus (eg coach from campus to the airport, flights, and transport to the partner institution), accommodation, group meals, local transport and social activities. The department would not cover additional costs incurred by the student- e.g. applying for a passport or visa, or any additional personal purchases made. The University will provide travel insurance, but students may wish to take out (or have) personal travel insurance to include healthcare or medical insurance for the duration of the trip (~3 - 5 days), and are advised to travel with a valid EHIC/GHIC.	Department	£0.00
Printing and photocopying	Cost of printing the group poster for the presentation assessment	Department	£0.00

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A3

	Weighting	Study time	Eligible for self-certification
Poster Presentation	30%	20 hours	No
a ~50/50 mix of students from Warwick and the external partner will work together to create a poster, which they will present at a conference			
Neuroscience Research Proposal	70%	50 hours	No
Research proposal based upon one topic from the lecture series or poster presentation			

Assessment group R3

	Weighting	Study time	Eligible for self-certification
Neuroscience Research proposal	100%		No

Research proposal based upon one topic from the lecture series or poster presentation

Feedback on assessment

Oral and written feedback

Availability

Courses

This module is Optional for:

- Year 3 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 3 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 3 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 4 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)