

LF312-15 Contemporary Research Topics in Neuroscience

22/23

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 country and 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 - Warwick and U Bordeaux

To provide students with an appreciation of international 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 a virtual 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 choose one to research further and:

- a) in collaboration with their external counterparts, to present a poster on this topic at a virtual conference
- 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: Appreciate and discuss contemporary topics in neuroscience research with colleagues at a renowned institute
- Key Skills: Assimilate learning and create a poster presentation in collaboration with colleagues at an external institution
- Key Skills: Present the poster at a virtual student-led conference with colleagues at an international university
- Cognitive Skills: formulate a research proposal extending work presented during the module
- Subject-Specific Skills: Assimilate knowledge to the point of being able to discuss, critique, present and extend specialist topics in contemporary neuroscience

International

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

This has arisen through a previous colleague at Warwick moving to U Bordeaux and being involved in teaching there. In discussion it was clear that there was considerable complementarity in our research and teaching provision and aspirations, and that such a virtual exchange would be mutually beneficial to our students.

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 1 hour (5%)
Tutorials	10 sessions of 1 hour (7%)
Other activity	15 minutes (0%)
Private study	61 hours 45 minutes (41%)
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 virtual poster to include time for Q&A on content

Costs

No further costs have been identified for this module.

Assessment

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

Assessment group A

	Weighting	Study time
Virtual Poster Presentation	30%	20 hours
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 virtual conference		
Neuroscience Research Proposal	70%	50 hours
Research proposal based upon one topic from the lecture series or poster presentation		

Assessment group R

	Weighting	Study time
Contemporary topics in neuroscience research	30%	
An essay based upon material delivered during the module lectures		
Neuroscience Research proposal	70%	
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)