



MEDI711

Research Frontiers in Medical Science 1

S1 Day 2016

Department of Biomedical Sciences

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Disclaimer

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General Information

Unit convenor and teaching staff

Co-convenor

Prof. Mark Connor

mark.connor@mq.edu.au

Consultation by appointment

Co-convenor

Dr Dane Turner

dane.turner@mq.edu.au

Consultation by appointment

Credit points

4

Prerequisites

Admission to MRes

Corequisites

Co-badged status

Unit description

In this unit students will acquire an advanced conceptual knowledge of breakthrough discoveries relevant to a range of topics within the field of medical research. Through the mentoring of senior research-active staff, post doctoral researchers and Faculty of Medicine and Health Sciences PhD candidates, students will gain discipline specific knowledge that will be relevant to their future research careers. Students will: 1. Attend seminars and lectures focused on ongoing research projects from the Faculty of Medicine and Health Sciences and from invited speakers from leading national and international research institutes. 2. Participate in self-directed and group tasks in which they will learn to research, read and critically review seminal research findings that have shaped contemporary thinking, and to disseminate their findings in written and oral form.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Demonstrate an understanding of the ethical and practical requirements for research with humans and animals.

Acquire advanced knowledge of current research in medical science

Synthesise and analyse information regarding medical research from a wide variety of sources

Identify and discuss complex problems and issues in medical research with intellectual independence

Articulate cogent argument in written and oral form for a variety of audiences

In addition to the discipline-based learning objectives, this unit will develop students' skills in the following: i) Foundation skills of literacy, numeracy and information technology; ii) Communication skills; iii) Critical analysis skills;

Assessment Tasks

Name	Weighting	Due
<u>Journal Club Presentation</u>	20%	Week 4
<u>Scientific News Article</u>	20%	Week 6
<u>Essay</u>	30%	Week 10
<u>Ethics Debate/ Discussion</u>	20%	Week 13
<u>Seminar Attendance</u>	10%	Week 13

Journal Club Presentation

Due: **Week 4**

Weighting: **20%**

Students will choose an individual article from a selection provided by the course co-ordinators and present it to the class in Week 4. Each presentation will be allocated 15 minutes in total for presentation and discussion. The student will be expected to guide and encourage active discussion about the paper rather than simply giving a talk to the group and waiting for questions.

The article will be a 'Seminal research paper' ie. an established publication which has made a significant impact in the field of medical research, as evidenced by very high levels of citation, either by providing a novel methodological advance or a significant conceptual breakthrough.

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Scientific News Article

Due: **Week 6**

Weighting: **20%**

Students will submit a 500 word article summarising a recent publication (published in the last 3 months) in the field of medical research that would be of interest to a wider scientific readership. The article must be written in the style that would be seen in popular media scientific publications such as New Scientist or Cosmos.

The article is worth 20% of your total grade and will be marked against its ability to capture the attention of the reader, be understood by a general scientific audience, accurately communicate the key points of the published journal article and be within the required length. The report must be submitted in electronic format (Word doc) via iLearn. Documents must be written in size twelve font using double spacing and 2 cm page margins. Figures are permitted but will be equivalent to 100 words (i.e. one figure plus 400 words = 500 words). The original article (source material) must also be submitted with the article in PDF format.

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Essay

Due: **Week 10**

Weighting: **30%**

Critical discussion based around topic of study during the semester

Students will submit an essay that critically reviews a key paper discussed within the context of one of the teaching topics studied during the semester. The essay will be of 2500 words, and it will be worth 20% of your final grade.

The essay will address the question “Discuss the major breakthrough that your chosen article presents, and review the seminal research findings that led to the development of knowledge in this field of research”

The essay will therefore present a clear summary of previous literature that supported the current studies (i.e. background and historical papers) and then a critical review of the primary paper and why it is considered a major breakthrough in the field. The primary paper must be an original research article and not a review paper.

Essays must be submitted in electronic format (Word doc) via iLearn. Documents must be written in size twelve font using double spacing and a 3 cm page margins. Source material must be referenced appropriately in the format of the journal Neuroscience, using a database management system such as Endnote®. Only high quality references (specialised scientific books and journal articles) should be used as reference material and wherever possible. Encyclopedias, newspapers and popular magazines are not acceptable sources. A maximum of 20 references is recommended.

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Ethics Debate/ Discussion

Due: **Week 13**

Weighting: **20%**

Students will participate in a debate on a motion related to either animal or human research ethics. Groups of students will work together to prepare an argument in support of or against the motion: individual students will be responsible for preparation of and delivery of their component of the argument. Grading will be dependent on the cogency of the argument as a whole and also the student's contribution to it.

On successful completion you will be able to:

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Seminar Attendance

Due: **Week 13**

Weighting: **10%**

The Faculty runs a number of formal presentation series throughout each semester, including Friday afternoon Research Seminars in the Department of Biomedical Sciences (weekly at 3pm in the Seminar Room, Level 1, 75 Talavera Rd), Grand Rounds (last Wednesday of each month from 1pm to 2pm in the Clinic Building, Ground Floor Interactive zone) and other occasional special presentations. MRes students are expected a minimum of 15 hours of seminars over the Semester (minimum of 1 hour of seminar per week), these can include Research Seminars hosted by AIHI, the Department of Health Professions or other Faculties. It is expected that Masters of Research students undertaking Research Frontiers will attend a minimum of 17 hours of seminars per semester, in order to attain a satisfactory level of attendance. To validate your attendance at the different seminars, you are required to have your record of attendance signed by a course co-ordinator, Chair of the Seminar or other senior member of FMHS Faculty in attendance. In addition to the log book attendance record, you must prepare a half page critique for each seminar, providing notes to record the key concepts, theories or ideas presented in the seminar. This log book will need to be submitted to your course co-ordinator upon completion of your unit. You will be awarded 10% of your final grade for submission of a satisfactory log book (attendance of minimum number of seminars and critique provided for each seminar). If the log book is incomplete or insufficient seminars have been attended, a zero grade for this component will be recorded.

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skills in the following: i) Foundation skills of literacy, numeracy and information technology; ii) Communication skills; iii) Critical analysis skills;

Delivery and Resources

Throughout the semester students will be provided with references to various journal papers which they will be expected to read and reflect on. Students are also encouraged to expand their knowledge and understanding of topics presented by further reading of the current literature (using databases such as Scopus and PubMed).

Unit Schedule

Week	Date beginning	Topic
1	Monday, 29 th Feb	<ul style="list-style-type: none"> • Introduction • Using Library resources • PRACTICAL: Library Tour
2	Monday, 7 th March	<ul style="list-style-type: none"> • Communication techniques • PRACTICAL: Tour of the hospital
3	Monday, 14 th March	<ul style="list-style-type: none"> • Introduction to Research Ethics • Animal & Human Ethics
4	Monday, 21 st March	<ul style="list-style-type: none"> • Research Quality • Translational research • PRACTICAL: Journal Club Presentations
5	Monday, 28 th March	<ul style="list-style-type: none"> • Research translation: Mice to Men
6	Monday, 4 th April	<ul style="list-style-type: none"> • Research translation: Mice to Men
Mid-term break		
7	Monday, 25 th April	ANZAC DAY- PUBLIC HOLIDAY
8	Monday, 2 nd May	<ul style="list-style-type: none"> • Research translation: Mice to Men
9	Monday, 9 th May	<ul style="list-style-type: none"> • Cancer Research
10	Monday, 16 th May	<ul style="list-style-type: none"> • Cancer Research
11	Monday, 23 rd May	<ul style="list-style-type: none"> • Cancer Research

12	Monday, 30 th May	• Cancer Research
13	Monday, 6 th June	• PRACTICAL: Ethics Debate/ Discussion

Please note that times for Practicals/ Tutorials will be arranged with students. Current time allocations are provisional.

Learning and Teaching Activities

Attend an Ethics Information Session (Human Ethics)

Students will be required to attend one of the 'Human Ethics Information Sessions' run by the University's Research Ethics and Integrity unit. Dr Karolyn White - Director, Research Ethics and Integrity at Macquarie University and/or Dr NityaPhillipson - Human Research Ethics Team Leader and Secretary to HREC Medical Sciences will be presenting the information sessions related to the National Statement on Ethical Conduct in Human Research and the Macquarie University application process for human ethics. Dates: March 10, April 7, May 5 (Thursday)
Time: 1:00pm - 2:00pm Venue:C8A 310 Senate Room

Complete the RACE (Research Animal Care and Ethics) Training Online Module

Students will be required to complete the RACE online training (Module 1 only), prior to attending Week 3 classes in preparation for the Ethics lectures. The on-line course covers the legislative and institutional requirements governing the use of animals for research and teaching at the Macquarie University, and the principles and practice of animal care and welfare.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

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Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

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Student Support

Macquarie University provides a range of support services for students. For details, visit <http://stu>

dents.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Demonstrate an understanding of the ethical and practical requirements for research with humans and animals.
- Synthesise and analyse information regarding medical research from a wide variety of sources

Assessment task

- Seminar Attendance

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcome

- Acquire advanced knowledge of current research in medical science

Assessment task

- Seminar Attendance

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Synthesise and analyse information regarding medical research from a wide variety of sources
- Identify and discuss complex problems and issues in medical research with intellectual independence
- Articulate cogent argument in written and oral form for a variety of audiences
- In addition to the discipline-based learning objectives, this unit will develop students' skills in the following: i) Foundation skills of literacy, numeracy and information technology; ii) Communication skills; iii) Critical analysis skills;

Assessment tasks

- Journal Club Presentation
- Scientific News Article
- Essay
- Ethics Debate/ Discussion

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or

practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Synthesise and analyse information regarding medical research from a wide variety of sources
- Articulate cogent argument in written and oral form for a variety of audiences
- In addition to the discipline-based learning objectives, this unit will develop students' skills in the following: i) Foundation skills of literacy, numeracy and information technology; ii) Communication skills; iii) Critical analysis skills;

Assessment tasks

- Scientific News Article
- Essay
- Ethics Debate/ Discussion

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- Identify and discuss complex problems and issues in medical research with intellectual independence
- Articulate cogent argument in written and oral form for a variety of audiences
- In addition to the discipline-based learning objectives, this unit will develop students' skills in the following: i) Foundation skills of literacy, numeracy and information technology; ii) Communication skills; iii) Critical analysis skills;

Assessment tasks

- Journal Club Presentation
- Scientific News Article
- Essay
- Ethics Debate/ Discussion

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- Identify and discuss complex problems and issues in medical research with intellectual independence
- Articulate cogent argument in written and oral form for a variety of audiences

Assessment tasks

- Journal Club Presentation
- Ethics Debate/ Discussion
- Seminar Attendance

Changes from Previous Offering

Some elements of MEDI701 (Research Foundations) are included in this unit for 2016.

Journal Club Presentation Marking Sheet

Journal Club Presentation Marking Sheet

Presenters Name	Date	Signature
Assessors Name:		
Assessment Item	SCORE	COMMENTS
Choice of article: Was the chosen article relevant to the field of medical research and was the rationale for the choice of article clearly articulated?	/2	
Content: Were the aims hypothesis/aims explained. How were the methods and results presented? Was context given to their relevance and the impact of findings ?	/10	

Presentation style	/4	
Did the speaker speak clearly and slowly using language that was understandable? Did they make good use of aids or examples. Was the talk within the 10 minute time frame		
Leading discussion	/4	
How well did the speaker answer questions and lead discussion on the article? Did they demonstrate extra reading around the topic?		
TOTAL	/20	

Seminar Attendance Log Book

Seminar Attendance Log Book

Student details	
Name	
Unit	
Unit Co-ordinator	

Seminar attendance record			
Date	Presenter	Seminar Title	Supervisor Signature
1			
2			
3			
4			
5			
6			
7 Human Ethics Information Session			