

# INCORPORATING RESEARCH INTO THE RMIT PHARMACEUTICAL SCIENCES PLACEMENT

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Program Coordinators:  
Pharmaceutical Sciences Honours (placement)  
RMIT University



# Ameena Jabbar



Ameena Jabbar

"Education is the most powerful weapon, which is used to change the world.

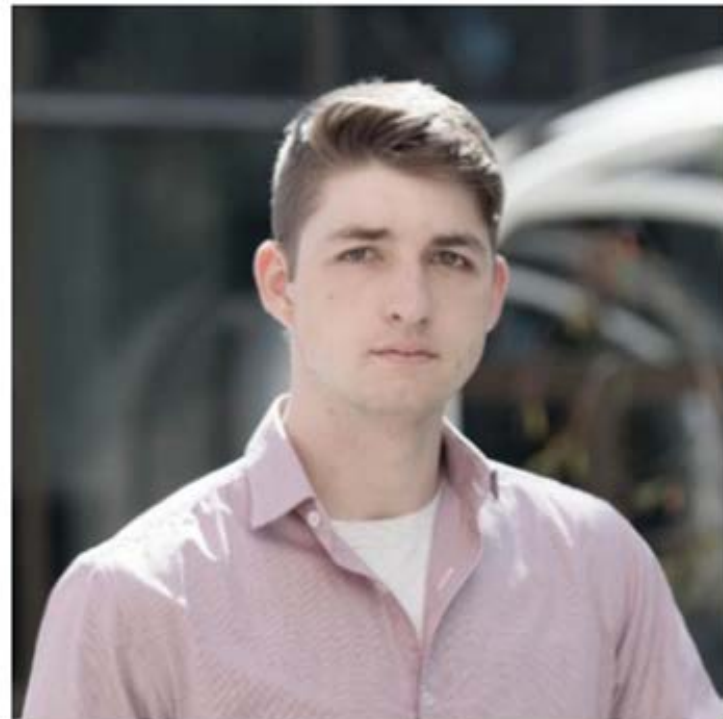
Science has always been my passion, so by the time I left high school I knew it was what I wanted to study."

Western Health Sunshine Hospital 2017

# Duncan Maher

"The work placement and quality of studies provided at RMIT, give you the best possible platform to launch your career in the pharmaceutical industry. I gained industry connections and experience that I wouldn't otherwise."

Ipsen Pharmaceuticals 2015



Duncan Maher

# Why do we need a Pharmaceutical Sciences degree?

- Basic biomedical science degrees is not competitive in the pharmaceutical job market
- Biomed is a good foundation for many industry jobs but lack **industry experience** and **academic research skills**
- In contrast, these skills are integral parts of our PharmSci (Honours) degree

# What is our focus?

- Industry experience
  - Pharmaceutical and Clinical Research-associated organizations in Australia require **specific skills and knowledge**
  - These skills are not covered by a biomedical or pharmacology degree but are part of our 3<sup>rd</sup> and 4<sup>th</sup> year
- Academic research
  - Advancement in the pharmaceutical industry requires more than specific knowledge and administrative skills
  - It requires higher level critical thinking, analysis and synthesis of information which is part of our 4<sup>th</sup> year

HONOURS DEGREES

## Bachelor of Pharmaceutical Sciences (Honours)



Apply



Enquire

RMIT's degree offers...

- Two years of basic biomedical training to provide a solid foundation
- A third year of **specialist courses**
  - Addresses specific skills and knowledge needed in industry
- An **honours year**
  - Addresses industry work experience and integrated academic research skills



# Specialist 3<sup>rd</sup> year courses

- Drug development and preclinical testing
  - Including the drug discovery process and non-human testing
- Clinical trial design and management
  - Including human ethics and governance, epidemiology, contract and academic run clinical trials and specialist statistics (e.g., power calculations)
- Drug and medical device regulations
  - Including registrations, medical information, pharmacovigilance, advertising and the pharmaceutical benefits scheme
- Content of courses constantly updated in line with advice from program advisory committee (PAC)

# Pharmaceutical Science Honours

- 40 weeks full time industry training
- Scholarships funded by industry

## Organizations



- Pharmaceutical companies
- Clinical Research Organizations
- Hospitals
- Universities



# 4<sup>th</sup> year honours

- Our Honours degree allows:
  - integration of theoretical and practical skills acquired at university with practice and training in the workplace
- With an honours degree we can provide:
  - academic research skills in **critical thinking, analysis** and **synthesis** of information
- Gives the students a 'step up' for advancement in their careers

# Integrated learning in the workplace

- Problem:
  - Our 40 week industry placements are a **full time job**
  - We can not expect the students to be running through a traditional honours degree at the same time
- Solution:
  - We can incorporate academic research into the industry placement honours degree
  - There are still many academic tasks for the student, but they are based on work activities

# Examples of integrated research in the workplace

- In the workplace our student generally are not generating new 'publishable' basic research data
- We need to supply the academic context
- Examples of projects our students are involved with:
  - Project literature review – Easy
  - Revising early clinical trial protocols – Hard
  - Reviewing new ethical issues – Hard

# Academic context in clinical trials

- Day-to-day work associated with running *First Time In Human* trials including reviewing complex trial protocols
- The academic context...
  - Trial protocols are not developed in a vacuum, but result from years of modifications due to a changing regulatory environment
- Example - TGN1412 was given to 6 healthy male volunteers in the UK (2006)
  - The drug was given to all 6 men within 20 minutes all of whom quickly showed life-threatening symptoms
  - Issue: Could this have been prevented?



# Critical analysis of historical literature

- As a result, 22 recommendations were made by UK regulatory agencies for new clinical trials
  - Route and Rate of Drug Administration
  - Calculation of Starting Doses
  - Immediate Maintenance of Life Support and onward transfer to Hospital
  - Onsite Emergency Trolley (checked weekly)
- The student can assess the landmark studies and / or the high impact mishaps that have shaped the regulatory environment

# Academic context in ethics

- Day-to-day work associated with reviewing ethics applications and reports, data management (including sensitive patient information)
- The academic context...
  - New advances bring up new ethical issues and new challenges

**Progress Report – Project Form (HREC)**

The sponsor is responsible for reporting to the reviewing Human Research Ethics Committee (HREC) regarding an approved research project. The sponsor must complete this report and submit to the reviewing HREC. The sponsor must provide a copy to the Coordinating Principal Investigator (CPI).

This Progress Report – Project Form must include information from all sites approved by the HREC receiving this report.

**Research Project**

HREC reference number  HREC approval date

Local reference number  Date of this report

Project title

Sponsor  Sponsor telephone

Sponsor contact (Aus)  Sponsor email

Coordinating Principal Investigator (CPI) for project

Study coordinator name  Study coordinator email

**Report**

Report period start date  Report period end date

Sites included in report

Summary of progress

Is an amendment request being submitted with this report?

Did the reviewing HREC waive the informed consent requirement?

Are participants being recruited for the project?

If participants are not being recruited, provide explanation (e.g. project is a registry)

Is the project a clinical trial?



# Academic context in ethics

- Example - the rise of 'apps' for health care
  - Issue: privacy and confidentiality of patient data
- Example - app for monitoring medication-taking patterns
  - Sensor for telling if the person has taken their anti-psychotic (aripiprazole) medication
  - Issue: insurance or other legal ramifications



# Critical analysis of new studies

- The student can critically assess new literature that will have an effect on ethics guidelines
- This encourages deeper analysis of new issues and their wider implications
- Thus, even if the topic is not directly related to the day-to-day activities, the research topic supports the students role and increases depth of knowledge in the ethics area

# Conclusion

- Academic research context encourages them to think and question about what they're doing – this is one of the major goals of higher degree research
- Makes them more involved/engaged in their placement, and helps them get the most out of the experience
- These projects encourage going beyond the basics and putting deeper thought into the implications of their work

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