MD/Special Training in Research (MD/STIR): Enhancing your medical education through research

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What is MD/STIR?

• For research-orientated undergraduate medical students
• Complete 6 months of research during their medical school training
  • Meet milestones (e.g.)
• Can think of it as “MD with honors”
• Annotation on degree parchment and transcripts
  • ”MD with Special Training in Research”
What kind of research is recognized?

• From basic fundamental to clinical
• Apoptosis studies are an excellent example of “bench-to-bedside” research
  • Observed a phenomenon
  • Determined molecular mechanism
  • Observed apoptotic defects in a human condition
  • Developed and tested a novel drug that treated the disease
1. Apoptosis is programmed cell death

- Described a new paradigm in cell biology

http://www.google.com/search?q=tadpole%20metamorphosis%20images&ie=UTF-8

William Harvey, MD

Harvey, (1628) Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus

John Kerr, MD

Kerr et al., (1972)
2. Caspase and Bcl-2 regulate apoptosis

- Discovered molecular mechanism for apoptosis

Sydney Brenner, PhD  John Sulston, PhD  Robert Horvitz, PhD

Ellis and Horvitz. 1986, Cell 44, 817
3. Bcl-2 causes lymphoma

- Discovered apoptosis is dysregulated in cancer

Carlos Croce, MD

David Vaux, PhD

S. Korsmeyer, MD

Tsujimoto et al., 1985

Vaux et al., 1988

McDonnell and Korsmeyer, 1991
4. Bcl-2 proteins as drug targets

- Designed small molecule inhibitors of Bcl-2 proteins

Stephen Fesik, PhD

Muchmore et al., 1996

Nuclear Magnetic Resonance
5. Venetoclax FDA-approved for lymphoma

- FDA approval of Bcl-2 inhibitor for CLL (2016)
What kind of research is recognized?
**MD/STIR requirements**

- **Research component:**
  - ~24 weeks of active research conducted under the supervision of a research-intensive faculty member
  - Produce and analyze data that tests a research hypothesis

- **Written component:**
  - Research proposal
  - Final report

- **Presentation component:**
  - 3 minute pitch
  - 15-45 minute oral seminar
  - Poster presentation
  - Final oral presentation and defense
### MD/STIR research timeline options

- **How do you fit research into your schedule?**

#### Option 1: FT Summer 1; FT 8wk of Summer 2

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#### Option 2: FT Summer 1; PT yr2; FT 4wk of Summer 2

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#### Option 3: FT Summer 1; PT yr2; PT yr 3

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* 2 oral presentations in Summer 1
** 1 oral presentation at time chosen by supervisor
*** Poster presentation in year 2 in FoMD Summer student research day
Where can you find information on STIR?

https://www.ualberta.ca/medicine/programs/mdstir

Faculty of Medicine & Dentistry

MD with Special Training in Research

Overview:
The Faculty of Medicine & Dentistry (FoMD) at the University of Alberta offers the MD with Special Training in Research Program (MD/STIR) to undergraduate medical education (UME) students. This program is designed for those students who wish to participate in research above what is offered within the UME curriculum. UME students join a research team and directly engage in biomedical research while concurrently fulfilling MD/STIR requirements (application, presentations, reporting, defense). Students that successfully complete their MD degree and all requirements of the MD/STIR program receive the designation of “Special Training in Research” on their degree parchment and transcript.

Contact Us
For more information, please contact:
Nicole Kosturic
Tel: 780-492-8365
E: nkosturi@ualberta.ca
FAQs

• What is the advantage of enrolling in this program since I already have research experience?
  – MD/STIR designation acknowledges your participation in a Faculty-approved structured research program
  – *Take your research to “the next level”*
  – → submit a research proposal
    • Under the guidance of your Supervisor, you write a research proposal (driver/passenger)
  – → work in a research lab
    • This is now YOUR project (motivated to learn from team members, propose methodology or analytical improvements etc.)
  – → write up your final data in a research report
    • By writing a formal report, you really get to “know your study”.
  – → give an oral presentation and defend your data
    • Improve your presentation and critical thinking skills and receive constructive feedback from a panel of experts
    • A chance to present your data in a scientific conference
FAQs

• Can I participate if I already have a post-graduate degree in research?
  – Absolutely!
  – This is a great opportunity to engage in different research and remain engaged with the research community

• Will I be able to publish my results?
  – Absolutely!
  – Some undergraduate research students can and do publish their results. Almost always, their research contributes to a larger study so there are multiple authors and the publications is usually a few years later. For this to happen, you need a good training environment with a good study design, robust data, meaningful results, and often—luck!
Comments from former MD STIR students

• The program benefits clinical training and development
  – Practice with verbal and written communication
  – Learning to be a medical expert in one area
  – Practice searching research medical databases for new research

• The best part of the program was getting to officially take part in research during medical school
  – The program allowed me to take a larger role in performing a research project that I may not have had without the program’s endorsement

• My research experience helped me develop research skills, technology development skills, complex problem-solving skills and it gave me multiple awesome interpersonal relationships with my research colleagues
• I think the most important thing I gained from this program is further experience in presenting and defending my research. I have given presentations before, but never had to defend my work. I also liked how the program mandated a certain number of presentations during the summer, as this provided motivation for me to give more presentations than I otherwise would have.
Questions?

Sooner or later you're gonna realize, just like I did...

There's a difference between knowing the path and walking the path.