MD/PhD & Graduate Program Overview

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Dr. Alan Underhill
Director, MD/PhD program
Associate Chair Graduate Studies
Department of Oncology
• Developing research as a competency in your medical education
• Creating career opportunities with a graduate degree
The goal of the MD/PhD program is to provide training towards becoming a Physician-Scientist.

To create future leaders in academic medical research.
Dr. Lorne Tyrrell, Professor, MMI, University of Alberta
MD, University of Alberta
PhD, Queen’s University (Pharmacology)
Dean, University of Alberta, FoMD, 1994-2004
Discovery of first antiviral drug for treatment of Hep B (game changer)
Former Chair, BoD, Gairdner Foundation

“For his studies on viral hepatitis, Dr. Tyrrell has received numerous prestigious awards including the Gold Medal of the Canadian Liver Foundation (2000), the Alberta Order of Excellence (2000), Officer of the Order of Canada (2002), Fellow of the Royal Society (2004), FNG Starr Award of the Canadian Medical Association (2004), and the Principal Award of the Manning Foundation (2005). He was awarded the University Distinguished Professorship at the University of Alberta and was inducted into the Canadian Medical Hall of Fame in April 2011.”

http://www.canhepc.ca/en/lorne-tyrrell
Paths to the Physician-Scientist

• The MD/PhD program; supported by the FoMD and UME; graduate degree is overseen by Faculty of Graduate Studies and Research; health related

• Clinical Investigator Program; carried out in residency; supported by the Royal College of Physicians and Surgeons of Canada; typically MSc

• Masters level degrees, including Masters in Public Health (MPH)

• Research fellowships that do not lead to degrees; have to acquire the research skills somewhere
University of Alberta program

• ~40 students have graduated since 2002; majority of graduates in Canada will secure academic positions as Physician-Scientists (with varying % research)

• Currently, 9 MD/PhD candidates at the UofA; 2 affiliates studying abroad

• Admit approximately 2 students per year

• 4 years on average to complete the PhD

• Funding available from CIHR vouchers (until 2022), competitive studentships (provincial & national), research grants, donations and advancement
Two paths to the MD/PhD: both require separate admission to MD

Path 1: notify of intent to seek MD/PhD by October 15 of year II; apply November 15 of year II

Path 2: admitted to medical school from graduate program; possibility for direct entry to MD/PhD

PhD at UofA (some exceptions); need not be in FoMD, but medically related

Upon receipt of MD/PhD, differential tuition fee is reimbursed for years I and II (currently $8,000); additional funding opportunities
MD/PhD alumni stats

• A clear path towards holding a Physician-Scientist position at an academic health center

• A majority of MD/PhD graduates will secure academic positions (83% of those completing all training)

• A majority will continue to carry out research (77%) and hold research grants (53%)

• 97.8% matched with their first choice of specialty

Skinnider et al (2017) CMAJ Open; DOI:10.9778/cmajo.20160152
HOW will you know?

• Already discovered a passion for research through summer or undergraduate projects

• Diverse opportunities in FoMD (lab based, patient centered, or population based/epidemiology/trials) and beyond

• Understanding career paths/opportunities (not one size fits all); diverse range of Physician-Scientists you can speak to

• Talk to me

• Talk to a current MD/PhD candidate
We conduct our teaching, research and patient care in accordance with the highest international standards. We work with our partners in education, research and health care for the greater good of the local, regional and global community.
What can you do with a PhD?

It’s not just for academia

Incredible diversity in career options
FoMD Alumni: 2005-2015

- Based on survey of 550 alumni

94% located
67% in Canada
>99% Employed

Maps: Bing 2018 ©Microsoft Corporation

Slide courtesy of Dr. Gina McIntyre
Alumni by Profession

- Professoriate: 126; 24.5%
- Postdoctoral Fellow: 96; 18.6%
- Scientist: 64; 12.4%
- Research Associate: 42; 8.2%
- Management: 41; 8%
- Training - Medical/MBA: 31; 6%
- Non-Acad_Physicians/Dentists/Others: 31; 6%
- Teaching: 24; 4.7%
- Business Development: 21; 4.1%
- Consulting: 10; 1.9%
- Technologist: 7; 1.4%
- Science Writing & Communication: 6; 1.2%
- Sales: 6; 1.2%
- Intellectual Property: 6; 1.2%
- Science Policy: 2; 0.4%
- Regulatory Affairs: 2; 0.4%

Total: n = 515

Slide courtesy of Dr. Gina McIntyre
Profile of an Academic Scientist

- Dr. Carol Cass, Emeritus Professor, Oncology, University of Alberta
- Former Chair, Department of Oncology and Tier 1 Canada Research Chair
- Director of the Cross Cancer Research Institute
- Significant leadership roles in the Canadian Cancer Society and Terry Fox Research Institute
- Fellow of Royal Society of Canada

“Her basic research on nucleosides has translated into better use of these molecules in cancer treatments. As chair of the U of A’s oncology department, she oversaw its growth from less than 40 to more than 100 faculty members and oversaw the development of research and postgraduate training programs. She has also served as director of the Cross Cancer Institute and vice-president of the former Alberta Cancer Board. Her achievements have been recognized by many awards, including election as a fellow of the Royal Society of Canada and fellow of the Canadian Academy of Health Sciences. In 2018, she received the Alberta Medical Association’s Medal of Honour for contributions to quality health care in Alberta.”

www.ualberta.ca
FoMD Graduate Programs (MSc & PhD)

• 12 independent departmental programs: biochemistry, biomedical engineering, cell biology, laboratory medicine and pathology; medical microbiology and immunology, medicine, neuroscience, oncology, pharmacology, physiology, psychiatry, surgery

• 7 administered under the Medical Sciences Graduate Program (MSGP): anesthesiology and pain medicine, dentistry, medical genetics, obstetric and gynecology, ophthalmology and visual sciences, pediatrics, radiology and diagnostic imaging

• Under the auspices of the Faculty of Graduate Studies & Research
Acquiring skills through grad training

• Designed to provide a high-level skill set: critical thinking, problem solving, independence, intellectual creativity, knowledge creation/translation, leadership, communication, networking

• Can build on these using teaching and internship programs to acquire more specialized skills

• Combination with another degree (i.e., MBA) or training area (i.e., intellectual property, clinical trials)

• Familiarize yourself with the career opportunities and structure your program accordingly
Know the career landscape

• Academic (<20% in tenure track positions), public and private sector positions

• Many non-tenure track opportunities within academia (in research, teaching, administration); all vital to the institution

• Incredible diversity in career opportunities outside of academia: biotech sector, pharma, intellectual property & patent law, publishing, funding agencies, education (i.e., NAIT, Grant McEwan, etc.), financial sector

• Be proactive in career planning (use an IDP)

• Lots of resources on Twitter
Contact information

• Visit the FoMD MD/PhD program website: https://www.ualberta.ca/medicine/programs/md-phd

• Contact me: alan.underhill@ualberta.ca or phone 780-432-8903 (Cross Cancer Institute)

• Graduate studies: Dr. Hanne Ostergaard (Associate Dean Research, Graduate Programs); hanne.ostergaard@ualberta.ca

• Individual graduate programs: www.ualberta.ca/medicine/programs/graduatestudies

• Contact Graduate Programs Advisor: fmdgrd@ualberta.ca or phone 780-492-9721