

CLINICIAN INVESTIGATOR PROGRAM (CIP)

STUDENT HANDBOOK

<https://medicine.dal.ca/research-dal-med/capacity/cip.html>



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Introduction

The Dalhousie University Clinician Investigator Program (CIP) is an accredited postgraduate medical education training program of the Royal College of Physicians and Surgeons of Canada whose major goal is to assist in the career development of clinician investigators in Canada. The program provides a formal postgraduate medical education pathway that fulfils the existing specialty/subspecialty requirements of the Royal College and provides integrated, structured, and rigorous research training.

The training involves a minimum of two years of research-intensive training that involves enrolment in a graduate degree program (graduate stream), to complete a thesis or equivalent, or in a postdoctoral fellowship program if the trainee already has a graduate degree (postdoctoral stream).

For the purpose of this program, health research includes not only the traditional areas of laboratory and clinical biomedical research, but also such fields as economics and management, and social, behavioural and information sciences, and policy as they apply to health and disease.

The program is available to residents enrolled in specialty or subspecialty residency programs accredited by the Royal College who demonstrate an interest in and a potential for a career as clinician investigators.

There are three pathways for CIP training:

1. The Continuous Training (CT) pathway, involves a minimum of 24 months of continuous, intensive research training, which can be done at different points in residency.
2. The Fractionated Training (FT) pathway is intended to allow for a distribution of a minimum 24 months of research during training, in periods of 3 months or longer blocks, with one year of continuous research training. The FT option is for individuals who wish to pursue research that requires more than several years to plan a research project, obtain research ethics board approval and complete the project, which may involve patient recruitment to a study. This pathway is particularly suitable for clinical epidemiology research, where intensive research activities will be separated by long waiting periods.
3. The Distributive Curriculum Training (DCT) pathway is intended for outstanding residents who have research experiences prior to entering a residency program. In the DCT pathway, there is coordinated entry into the PGY1 year for both CIP and the specialty program. The PGY1 and PGY2 years in the DCT pathway are identical to a traditional specialty training program but the PGY3 equivalent is distributed over the PGY3 to PGY5 years, with three months of selective time in the PGY3 year utilized for research and completion of some clinical training requirements during the research block. In the DCT pathway, there are 27 months of research experience.

If required, the duration of research training in all CIP pathways can be extended, for example to allow completion of a PhD or other research experiences. Individuals who complete the program should have a solid grounding in research but may require more than the minimum two years of research training to embark on a career as an independent researcher.

CIP FACT Sheet

Program Description:

The Clinician Investigator Program (CIP) at Dalhousie University is designed to train clinician scientists to a high standard. Recognizing interests of researchers at Dalhousie, the program is designed to incorporate two strengths. The first is a depth of understanding of subject material; the second is a broad understanding of the nature of the research process.

Depth of understanding will be achieved chiefly through a trainee's mentoring in a laboratory or clinical investigation unit of excellence. Here, the trainee will work to achieve mastery of a particular field of investigation, under the supervision of an experienced mentor, and in collaboration with graduate students and post-doctoral trainees in basic and clinical sciences.

Breadth of understanding will come through participation in a mandatory course designed to survey the research process, and situate it in its social, scientific and educational contexts. Trainees will meet monthly to discuss selected topics, which, over a two-year curriculum, should give them a broadly focused understanding of clinical research.

Joint enrollment in the CIP and in an accredited MSc/PhD program at Dalhousie is expected and requirements of both programs must be met. The core course (CIP Seminar Series Curriculum) is mandatory for the first two years of the trainee's program. Trainees can enroll in a minimum two-year program, with extension dependent upon the availability of funding.

Note: Residents entering the program will remain at the same PGY level until they complete the research component of CIP.

Supervisors: Supervisors must be members of the Faculty of Graduate Studies at Dalhousie University. Supervisors may come from either a clinical or basic science department. In addition to the supervisor, the trainee's supervisory committee must include two members at least one of whom is clinician scientist.

Funding: Depending on availability of funds, **the CIP** will contribute to the stipend of the successful CIP applicant. To be eligible for the stipend the full application must be received by December 15. The total salary, including the CIP stipend portion, will be commensurate with the income for the corresponding PGY level of the trainee at the time of entry into the program.

The Department must indicate in writing the amount of research time for which the applicant may be credited in the CIP research program. This time may also be counted for the CIP and the sponsoring specialty/subspecialty program of the Royal College of Physicians and Surgeons of Canada. The department must guarantee that funding at the appropriate PGY level will continue throughout the CIP. The sponsoring department must also agree to accept the applicant back into his/her program at the completion of the CIP.

The Applicant must agree to apply for external funding for financial support for their second year in the CIP. If successful, the external award will be applied to his/her support.

Applying to the CIP – Quick Steps

- 1. Talk to Department Research Director to get advice on areas of research interest.**
 - a. Anesthesia – Dr. Orlando Hung
 - b. Emergency Medicine – Dr. Stacy Ackroyd
 - c. Family Medicine – Dr. Fred Burge
 - d. Health Informatics – Dr. Raza Abidi
 - e. Medicine – Dr. John Hanly
 - f. Obstetrics & Gynecology – Dr. Linda Dodds
 - g. Ophthalmology & Visual Sciences – Dr. Bal Chauhan
 - h. Pediatrics – Dr. Conrad Fernandez
 - i. Psychiatry – Dr. Ben Rusak
 - j. Surgery – Dr. Greg Hirsch
 - k. Urology – Dr. Ricardo Rendon

- 2. Find a Supervisor (he/she must be a member of the Faculty of Graduate Studies - FGS)**

- 3. With input from Supervisor, pick a Research project.**

- 4. Application to CIP for Graduate or Non-graduate Stream (Deadline December 15)-**
<https://medicine.dal.ca/research-dal-med/capacity/cip.html>

- 5. Application to Masters/PhD program for CIP Graduate Stream (Deadline Sept, Jan, May) – programs include, but not limited to:**
 - a. Medical Research Graduate Program (MRGP) - <https://medicine.dal.ca/research-dal-med/capacity/mrgp.html>
 - i. Dr. Michael Bezuhty
 - b. Medical Neuroscience – <https://medicine.dal.ca/departments/department-sites/medical-neuroscience/education/graduate-program.html>
 - i. Dr. Kazue Semba
 - c. Community Health and Epidemiology - <https://medicine.dal.ca/departments/department-sites/community-health.html>
 - i. Dr. Kathleen MacPherson
 - d. Health Informatics – <http://www.dal.ca/academics/programs/graduate/health-informatics.html>
 - i. Dr. Raza Abidi
 - e. Psychiatry – <https://medicine.dal.ca/departments/department-sites/psychiatry/education/graduate-programs-in-psychiatry-research.html>
 - i. Dr. Sherry Stewart

- 6. Apply for funding (with assistance from your supervisor)** - Residents will receive an equivalent support to their clinical counterparts. The funding for the students enrolled in the program can come from a variety of sources which include outside awards or scholarships from national funding bodies and internal awards, such as those listed below.

Funding for Graduate Studies in the CIP **must** be secured through your Clinical Department Head or other source **prior** to acceptance into this program. A letter from the Department Head will serve as sufficient documentation for this purpose (**Appendix A**). Below is a list of funding opportunities:

- a. CIHR
 - i. [Banting and Best Canada Graduate Scholarships - Master's Award](#)
 - ii. [Michael Smith Foreign Study Supplement – Canada Graduate Scholarship](#)
 - iii. [Banting and Best Doctoral Research Award](#)
 - iv. [Fellowship: Banting Postdoctoral Fellowships Program](#)

- b. Postgraduate Awards
 - i. [Killam Postgraduate Medical Scholarship](#)
 - ii. [Samuel R. McLaughlin Fellowship](#)
 - iii. [Ross Stewart Smith Fellowship in Medical Research](#)
 - iv. [Ross Purse Doctoral Fellowship](#)
 - v. [Resident Research Awards](#)
 - vi. [Clinical Department Awards](#)

- c. Beatrice Hunter Cancer Research Institute (BHCRI) awards
 - i. [CBCF Studentship](#) – February 1 deadline
 - ii. [CRTP Traineeship Award](#) - March 1 and October 1 deadline

- d. [CIP Stipend Support](#)

- e. [Department of Surgery Resident Salary Support](#) – November deadline

- f. [Department of Medicine University Internal Medicine Research Foundation \(UIMRF\) Funding](#)

- g. [NSHA Research Fund](#)

- h. Dalhousie Medical Research Foundation (DMRF) awards:
 - i. [DMRF Kathryn A. Weldon Travel Award](#) – February deadline
 - ii. [DMRF DeWolfe Graduate Studentship](#) – May deadline
 - iii. [DMRF MacDonald Graduate Studentship](#) – May deadline

- i. [Faculty of Medicine Graduate Studentship](#)

- j. Faculty of Graduate Studies (FGS)
 - i. [FGS Scholarships and Fellowships](#) – various deadlines
 - ii. [Graduate Thesis Student Conference Travel Grant](#) – deadline is one month prior to date of conference
 - iii. [FGS External Funding Opportunities database](#)

Clinician Investigator Program Residency Program Committee (CIP-RPC)

The CIP-RPC is an appointed committee of the Program with the following primary responsibilities:

- a) to recommend to the Royal College which students be admitted to the CIP
- b) to recommend sources of external funding that the students can apply for support
- c) to monitor progress of students. The committee will ensure that each student fulfils the requirements of the Royal College and CIP. To this end, the CIP Manager will maintain records of all students.

Research Supervisor

Normally, trainees will have made mutually acceptable arrangements with a faculty member for the supervision of their research before registering for their program at Dalhousie. As soon as possible after registration, new students, with their supervisor's advice, will establish a supervisory committee.

The supervisor is an investigator who will guide the student as the project progresses and serve as an effective role model for residents. This supervisor is adequate to provide the breadth and depth of the program, assessment and feedback to residents.

Research supervisors adhere to the terms and conditions required by the CIP for resident research training, and have:

- Established research funding, with sufficient funds to allow successful completion of the degree by the resident;
- Established research productivity (manuscripts, abstracts, presentations);
- An international/national reputation in the field; and
- Experience supervising graduate students.

Research supervisors and the research supervisory committee for each resident are responsible for:

- Overseeing the individual research program;
- Research and clinical mentoring;
- Evaluating research competencies;
- Providing interim assessments; and
- Reporting to the CIP-RPC.

At the end of the research, the supervisor, with the supervisory committee's help, will submit a Final **ITER** (FITER).

Supervisory Committees

The course of study of every student in the CIP is approved by the student's supervisory committee. Supervisory Committees must be appointed within the first three months after registration in the program and have Faculty of Graduate Studies membership. The committee members are selected by the supervisor, with student input, and approved by the CIP-RPC. **For MSc, the committee must consist of the supervisor and 2 members, one of which must be a clinician scientist. For PhD, the committee must consist of the supervisor and 3 members, one of which must be a clinician scientist.** If changes are required, the student should consult with the supervisor and the CIP Director. In the case of a trainee doing his/her MSc or PhD degree, this committee also forms most of the examining committee which recommends to the RPC when a student has satisfactorily fulfilled all requirements.

Duties of Supervisory Committees

- to meet with the student at least twice a year (usually in May and November) to discuss the student's progress and recommend strategies to address any problems in the research program.
- to report on the student's progress bi-annually by completing minutes of its meetings and approving the CIP RITER (following the committee meeting with the student).
- along with the supervisor, assess the body of work completed by the student and recommend on the timing of thesis submission.
- form the nucleus of the examining committee.

Trainee Progress Review

Trainees are expected to submit 2 RITERS per year. The CIP Director meets with trainees and their supervisor for a bi-annual and annual evaluation meeting usually in Jan/Feb and late summer/early fall. Prior to these meetings, trainees are expected to complete the required paperwork ie CIP RITER and CIP Student Trainee Progress Report

Graduate trainees are expected have **two** supervisory committee meetings **per year** and a copy of the meeting notes (completed on the required forms) must be submitted to the Program Manager for the student's file.

In addition to submitting the committee reports from their semi-annual supervisory committee meetings, students enrolled in a graduate program will also be required, annually, to complete a Faculty of Graduate Studies Progress Report Form on the Graduate Studies Information System (GSIS). The supervisor and Graduate Coordinator must approve this form before submission to FGS.

The final progress review is the CIP Exit Interview. The exit interview will be conducted by a member of the CIP-RPC who is at arms-length from the resident's core program and the resident's supervisor. It will take place after the resident has completed their CIP and clinical training requirements. The resident will be assured that their comments will be kept confidential and, unless they wish otherwise, will only be opened for analysis after the resident has left Dalhousie.

Work Outside of Graduate Studies

During their Graduate Studies, residents will be permitted to continue participation in their Clinical Department Grand Rounds. **In addition to Grand Rounds, the resident may also be permitted to participate in clinical work up to a maximum of 16h per week.** All clinical commitments must be approved by the CIP-RPC and must not interfere with the research program.

CIP Seminar Series

The CIP provides programming in the following sample topics through a web-based series of 12 case scenarios. Each case presents clear objectives and assesses competency in the principle objective through a multiple choice question at the end of the case. Students evaluate the quality of the case through an anatomised questionnaire. The Case based curriculum was developed by a past Dalhousie CIP Director with annual review by the CIP-RPC. This curriculum has been adopted by other CIP Programs across Canada.

A Seminar Series takes place monthly. Students actively involved in this program are expected to participate in the case scenario discussions through the seminars and on alternate months provide an overview of their research project. As well, each participant is expected to: contribute to the Discussion Board on the web site, answer a skill testing question about the case, and contribute to an evaluation and suggestion questionnaire about the case.

On alternate months between Case Scenarios, the students present their own research plans and accomplishments to their colleagues as a research seminar. The student presenters are chosen to present their work roughly twice over the 2 years of CIP. The supervisor is invited to participate in the research presentation.

Case 1: Wheezing in Winnipeg

- To appreciate various study designs (quantitative and qualitative) to address a hypothesis.
- To identify the various ethical considerations of each design.
- To choose an exposure definition and a disease definition that you would use in your study and evaluate the relationship between them.
- To identify the role of the research ethics board in your organization.

Dalhousie CIP Case 2: Company Contracts

- To understand the legal implications of a confidential disclosure agreement and the issues around conflict of interest.
- To understand the differences between sponsor-initiated and researcher initiated research.
- To understand how the terms and conditions of confidentiality agreements may conflict with a clinician's duty to disclose information to protect subjects.

Dalhousie CIP Case 3: Workplace Discrimination and Sexual Harassment

- To identify the harms of sexual discrimination and sexual harassment and understand why these harms might not always be recognized.
- To understand why individuals who experience sexual discrimination and sexual harassment might not complain.
- To understand how those who enjoy structural power and privilege may have difficulty recognizing discriminatory practices that are normalized in our society.
- To understand that working in a chilly climate does not boil down to any one thing but is multi-factorial. Any one factor, considered in isolation, may seem inconsequential or simply unfortunate.

Case 4: No Rash Decision

- To understand differences in conducting investigations for the purpose of clinical, public health or research objectives eg. ethics, record keeping etc.
- To develop an analytic approach to the investigation of an outbreak.
- To understand privacy and ethical issues on the use of a database.
- To appreciate issues involved in research involving minority populations.
- To appreciate principles in assigning authorship in research.

Case 5: Clinical Trials and Clinical Patient Care

- To become familiar with the laws and policies governing human subject research and clinicians conducting research.
- To understand the distinct roles and responsibilities of a researcher and clinician.
- To appreciate when a clinician may be in a conflict of interest when performing both clinical and research roles.
- To understand how the terms and conditions of confidentiality agreements may conflict with a clinician's duty to disclose information to protect subjects.

Case 6: Clinical Trial and Toxicity

- To become familiar with the ethical issues for involvement of children in research that involves risk.
- To understand the requirements for use of human tissue.
- To become familiar with the rules and obligations in contracts and appreciate your obligations to your university.

Dalhousie CIP Case 7: Misadventures in New England

- To understand the ethical requirements for use of human tissue for research purposes.
- To prepare an appropriate reaction to possible misconduct in research.
- To learn the problems of publishing in a predatory journal/

Dalhousie CIP Case 8: Authorship

- To learn about attribution of authorship in manuscript publication.
- To determine what constitutes misconduct or misattribution of authorship.
- To identify strategies to avoid or resolve disputes on authorship with collaborators and senior stakeholders.

Case 8: Recruitment Negotiations and mentoring

- To understand the process for recruitment to an academic clinical department.
- To identify criteria to help you make a career decision.
- To develop skills in contract negotiation.

Case 9: Relocating to Montreal

- To understand the tools of another discipline and how to interact with researchers in a different discipline.
- To appreciate the need for mentors and mentoring in career development.

- To appreciate responsibilities and requirements for hiring research assistants.
- To understand the issues that may impact a new researcher in establishing themselves in a new environment.
- To develop priorities and a focus in their activities and interaction with others.
- To understand responsibilities and policies regarding employee employer relations.

Case 10: Discovery in Montreal

- To understand the legal implication of a confidentiality contract agreement and the issues around conflict of interest and a confidential disclosure agreement.
- To understand the principles and responsibilities of researchers in GCP.
- To understand adverse event reports as a means of ensuring patient safety.
- To understand the role of the DSMB in evaluating trial data.

Case 11: Negotiating a Community Research Project

- To understand that research may be perceived by the researchers very differently from how it is perceived by communities and experimental subjects.
- To understand the principles of effective negotiation where parties differ in cultural background.
- To understand the place for comparative research that involves multiple intervention options, but no placebo arm (e.g. childhood cancer clinical research).

Case 12: Implementing Change

- To understand that perception of research by researchers may be very different to that of policymakers and planners.
- To understand how research and health policy interests can complement each other for a greater long-term benefit.
- To understand when and how to engage the community, health policymakers, administrative bureaucrats.
- To understand the strategies for effective knowledge translation and how to incorporate a KT plan and budget in a research proposal.
- To understand what will be expected in preparing a report for an organization that is not involved in research

Dalhousie Case 13: Next Generation Sequencing and Diagnostics

- To understand the science, limitations and potential
- To appreciate the ethical/legal/societal issues and effects on health economics

Contact Information

If you have questions about any of the material in this handbook or about any aspect of the Clinician Scientist Program, please direct your enquiries to:

Dr. Michael Bezuhly
CIP Director
Pediatrics, IWK Health Centre

Wendy Weckwerth
Program Manager
Medical Research Development Office

Tel: 902-470-8048
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Appendix A



Date

Dr. Michael Bezuhly
CIP Director
Faculty of Medicine
Halifax, NS B3H 4R2

Dear Dr. Bezuhly:

The following is the supporting information required as part of the application from our resident to the Clinician Investigator Program (CIP) and is only valid if an agreement between the NSHA and the sponsor is reached:

Resident Name:

Program:

Current Level of Training:

Duration of proposed CIP training is:

The portion of total research time that Clinical Residency (Parent) program agreed to count towards candidates overall residency training*:

**The Clinical Residency (Parent) program must refer to the program's Royal Collage Standards of Training (STRs) to confirm total allowable time, and provide the amount of time (all or a portion of the allowable) that will be counted towards the above noted resident's training.*

It is agreed that all remaining CIP research time requires sponsored funding. The NSHA Sponsorship agreement as well as where the monthly salary/benefits billing should be directed to:

Send NSHA Sponsorship agreement to:

Send monthly salary/benefits billing to:

Sincerely,

Departmental Head Signature

AND

Program Director Signature