

**RESEARCH**  
CARDIOLOGY RESIDENCY PROGRAM  
McMASTER UNIVERSITY

ROTATION SUPERVISOR: DR. STUART CONNOLLY

OVERVIEW

McMaster University is a leader in cardiovascular research, and research is considered an integral component of the development and training of adult cardiologists. A number of major projects are always ongoing and the resident has the opportunity to work on these from the “inside” or to develop their own research project. An ongoing commitment throughout the three years to research is expected, and dedicated blocks of time, with no other scheduled responsibilities, are scheduled in each year. Opportunities exist to develop and answer questions in both the basic sciences (with the Henderson Research Centre in Vascular Biology and Thrombosis) and the clinical/and population arena (with the Population Health Research Institute). It is expected that the trainee will identify a mentor in an area of his/her interest early in the course of their training and develop a research protocol, submit for internal and possibly external review, and execute the planned investigation. It is the goal of the program to have each trainee present at least one oral presentation at a national/international meeting, and first-author one peer reviewed paper, and one review article in their area of interest.

There is a weekly conference related to Resident Research. This consists of either attendance at Population health Research Institute *Research rounds* (about 15 times per year) or one of the following:

1. Resident presentation of ongoing research.
2. Journal club.
3. Faculty presentation of research methodology.

GOALS AND OBJECTIVES

The goals and objectives for the rotation have been formulated to guide cardiology residents in identifying and acquiring the key competencies required to succeed as a consultant cardiologist and are based on the CanMEDS 2015 framework of the Royal College of Physicians and Surgeons of Canada. These key competencies include: medical expert, communicator, collaborator, leader, health advocate, scholar and professional. The rotation provides graded responsibility in achieving these objectives based on the resident’s level of training and previous experience.

PGY 4:

The resident is able to:

1. Research topics of interest with the help of assigned mentor/supervisor.
2. Present researched topics in rounds/conference formats.
3. Critically appraise journal articles of relevance to cardiovascular disease and present such analyses in the form of Journal Club presentations.
4. Prepare and present topics/case reports/research studies of importance at regional cardiology rounds or at national and international meetings.
5. Attend one of the National Annual Scientific Sessions of the Canadian Cardiology Society/American Heart Association/American College of Cardiology/European Society of Cardiology.
6. Identify areas of potential research, including participation in clinical trials.

PGY 5:

The resident builds on the previous skill set and is also able to:

1. Further refine research and presentation skills by acquiring the ability to present complex and/or controversial topics in cardiology in rounds/conference formats.
2. Participate in ongoing clinical and basic science research protocols of the Division of Cardiology
3. Attend one of the National Annual Scientific Sessions of the Canadian Cardiology Society/American Heart Association/American College of Cardiology/European Society of Cardiology.

## PGY 6:

The resident develops core research level skills and is able to:

1. Prepare and submit for publication manuscripts on original research conducted during their training.
2. Formulate research plans for a future career in Cardiovascular Medicine.
3. Attend and present their research at one of the major general cardiovascular conferences or at a major cardiac subspecialty conference.

## CANMEDS COMPETENCIES

### A MEDICAL EXPERT

1. Obtain skills required to understand the different types of research as well as the ethical and legal issues in conducting clinical research.
2. Obtain a basic understanding of the statistical methods required to design a research project.
3. Obtain skills for critical appraisal of literature.

### B COMMUNICATOR

1. Write up research proposal, including ethics submission and consent forms as required.
2. Write interim research reports.
3. Presentation of data in oral, abstract and manuscript form, including presentation at peer reviewed meetings locally or internationally.

### C COLLABORATOR

1. Learn to collaborate with research study personnel involved in your research.
2. Develop an effective collaborative relationship with your research mentor/supervisor.
3. Learn to collaborate with colleagues in advancing group research projects.

### D LEADER

1. Acquire the skills necessary to set a budget for proposed or ongoing research so as to utilize resources in a cost-effective manner.
2. Develop time management skills to balance research with ongoing clinical and personal commitments.

### E HEALTH ADVOCATE

1. Evaluate research initiatives with patients' best interests in mind.
2. Evaluate all research initiatives with ethical principles as a primary focus.
3. Understand the role of research in improving individual patient health.
4. Understand the impact of research on population health.

E SCHOLAR

1. Demonstrate the ability for self-directed learning and show initiative in the planning and execution of a research project.
2. Attend and contributes to rounds, seminars and other learning opportunities.
3. Demonstrate knowledge in research methodology and perform appropriate data gathering, interpretation/synthesis, and presentation.

G PROFESSIONAL

- 1 Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.
- 2 Demonstrate awareness of personal limitations and ability to seek assistance or consultation when appropriate.
- 3 Understand the nature of professional interpersonal relationships and boundaries with patients, medical colleagues and research staff in relation to research studies.
- 4 Understand and apply basic principles of medical ethics including: informed consent, research ethics, and patient autonomy as they relate to research studies.



## PG ITER - Cardiology/Internal Medicine

**Rotation: Research**  
**Level: All Levels**

Legend:

N/A - Non Applicable

- 1 - **Unsatisfactory**: Performs significantly lower than level of training
- 2 - **Provisional Satisfactory**: Performs lower than level of training
- 3 - **Satisfactory**: Meets expectations at level of training
- 4 - **Very Good**: Exceeds expectations for level of training
- 5 - **Outstanding**: Significantly exceeds expectations for level of training

NOTE: If the learner functions at their training level, then the learner should obtain a score of Satisfactory.

### Medical Expert

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates the skills required to understand the different types of research as well as the ethical and legal issues in conducting clinical research.	0	0	0	0	0	0
Demonstrates a basic understanding of the statistical methods required to design a research project	0	0	0	0	0	0
Demonstrates the skills required for critical appraisal of literature	0	0	0	0	0	0

### Communicator

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Writes up research proposal, including ethics submission and consent forms as required	0	0	0	0	0	0
Writes interim research reports	0	0	0	0	0	0
Presents of data in oral, abstract and manuscript form, including presentation at peer reviewed meetings locally or internationally	0	0	0	0	0	0

### Collaborator

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
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Collaborates effectively with research study personnel involved in research project	0	0	0	0	0	0
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## Leader

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	
	1	2	3	4	5	N/A
Demonstrates skills in setting a budget for proposed or ongoing research.	0	0	0	0	0	0
Demonstrates time management skills to balance research with ongoing clinical commitments.	0	0	0	0	0	0

## Health Advocate

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	
	1	2	3	4	5	N/A
Evaluates research initiatives with patients' best interests in mind.	0	0	0	0	0	0
Evaluates all research initiatives with ethical principles as the primary focus.	0	0	0	0	0	0
Understands the role of research in improving individual patient and population health.	0	0	0	0	0	0

## Scholar

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	
	1	2	3	4	5	N/A
Demonstrates self-directed learning and shows initiative in the planning and execution of a research project.	0	0	0	0	0	0
Demonstrates knowledge in research methodology and performs appropriate data gathering, interpretation/synthesis, and presentation.	0	0	0	0	0	0

## Professional

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	
	1	2	3	4	5	N/A
Conducts all research with primary objectives of maintaining highest degree of professional conduct.	0	0	0	0	0	0
Understands and applies basic principles of medical ethics including: informed consent, research ethics, and patient autonomy as they relate to research studies.	0	0	0	0	0	0

## OVERALL COMPETENCE (FOR LEVEL OF TRAINING)

	Incomplete	Unsatisfactory	Provisional Satisfactory	Satisfactory
	1	2	3	4
Please check the appropriate box for the overall competency of this learner's training level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was input sought from other faculty, allied health professionals, or patients and their family members? <i>(If yes, please please specify in the comment box provided immediately below)</i>				<input type="radio"/> Yes <input type="radio"/> No

Comments

### Summative Comments

*(Any item evaluated above or below a 3, must include comments and examples to justify the rating)*

### Formative Comments

*(Please provide 1-2 items for the resident to improve upon in order to progress along the competency continuum)*