Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

Obstetrics and Gynaecology Residency Program
Research TIPs for Residents

1. What are the steps of a research project?

1.1. **Problem/Obstacle/Idea:** The first step should be to express the idea in some reasonable, manageable form, even if preliminary.

1.2. **Hypothesis:** based upon previous experiences (of the resident, Department, or others in the literature), a preliminary proposition about the relationship between two or more variables is formulated (i.e. If such and such occur, then so-and-so result).

1.3. **Design of the Approach/Test/Experiment:** If the problem is well stated, the hypothesis adequately formulated and the implications of the hypothesis carefully deduced — designing an empirical test to address the hypothesis should be evident. This step will involve identifying and securing needed resources, precisely defining experimental procedures and consideration of appropriate statistical analysis of data that to be collected. Feasibility or pilot studies may be required. A detailed study proposal and protocol should be developed.

1.4. **Execution:** Following Research Ethics Board (REB) approval, the next step is execution of the study. Meticulous recording of the data is essential.

1.5. **Interpretation/Conclusion:** On the basis of the research evidence, the hypothesis is either accepted or rejected. Furthermore, the data gathered should permit some conclusions regarding the operational implications of the hypothesis.

Literature searches alone, however systematically done, do not denote research. On the other hand, a complete literature search of various studies addressing a particular problem together with a thorough data analysis of those studies (i.e. using techniques of meta-analysis) could be considered research.

2. Research MENTOR

Working with a research mentor can be invaluable. PGY1s can be assigned a research mentor on request. The mentor acts as a faculty contact for residents to help ensure that they do not experience unnecessary delays in finding a supervisory team to get their research underway.

The mentor is not typically the same person as the research supervisor, but an additional resource person to assist with navigating research. For an overview of the expectations/framework for working with a research mentor (see **Appendix A**).

3. Your Research SUPERVISOR

- Finding a research supervisor is one of the most important steps.
- The Research Supervisor must hold a University of Toronto appointment and have no family relationships with the trainee.

- Often, you have an idea and approach someone who is interested in that area, or your mentor suggests someone, or you have a supervisor in mind and you develop a question together.
- Speak with senior residents about who they have worked with in the past.
- It is OK to ask a potential supervisor about the number of projects they have supervised, or are currently supervising/undertaking.
- Read the "FAQ for Research Supervisors" in advance of a first meeting with a potential supervisor. Also, consider emailing the link to the supervisor, or take it with you to discuss.

4. Developing your Research Question

- To get ideas, speak to other residents – they may have had someone approach them or had some ideas after they committed to their projects.
- Review the Department Annual Research Day agenda from prior years - http://obgyn.utoronto.ca/annual-research-day
- Participate in the Research Proposal Review sessions following AHDs.

5. Research Requirement Checklist

- See the "**Research Requirements**" checklist on the resident intranet.
- This is a key document for residents, as it outlines the requirements for achieving success.

6. Mapping your Timeline

It is important to start early, allot your time, and plan efficiently. See **Appendix B** for an example of what to do by when.

Also, try to assess specific "task" time. For example, if you will be doing a chart review, assess how long it would take you to review one chart and multiply by the total number of charts you want to review. Alternatively, if you will be doing a survey, how much time is required per survey?

7. Funding and Costs

Consider your budget (remember printing costs for surveys/posters) and discuss this with your supervisor:

- Printing Posters can be expensive; be sure to factor in approximately $100 per poster ($150 if laminated).
  - Posters printed on fabric are an attractive option for those presenting at distant conferences. These posters are available at the University of Toronto Printers and can be delivered directly to you. For more information see www.utposter.com

- For printing handouts, hospital libraries will often allow you to print if you are registered at that site. Also ask your supervisor, as they may have a printer code that allows you to copy/print large numbers.
- Do not forget about resident conference funding through the OBGYN Residency Program. You are entitled to funding support to a maximum of $3000 over the course of your 5-year residency training, whether presenting or not (towards registration, travel, accommodation, and meals). Poster printing does not qualify.
- Consider applying for research grants – see Section 10.2.
- Your supervisor may have funding – ask about it.

8. Statistical Analysis

- Statisticians may be available through the Department or clinical site – ask your Research Supervisor.
- **Meet with a statistician BEFORE collecting data,** to ensure your analysis is feasible and affordable.

9. Evaluation

Do not forget that you are being evaluated by your research supervisor over the course of your residency (not just the research block). See the Research Objectives at: http://obgyn.utoronto.ca/rotation-specific-objectives-rso.

The Residency Program Director reviews research progress at each Biannual meeting. There will be a progress report for you to complete prior to each of these meetings.

10. Additional Resources

10.1. Faculty Research Interests

The OBGYN Research Committee is working on an updated compendium of faculty research. In the meantime, Residents who would like help connecting with faculty working in a particular area should speak with their Research Mentor or contact the Clinical Research Director, Dr. Mark Yudin - yudinm@smh.ca.

10.2. Sources of Funding for Resident Research

Funding requests can take a considerable amount of time and should be considered during the early stages of project development. The following are a few potential sources of resident research funding:

10.2.1. **Hospital OBGYN (and Divisional) Practice Plans** typically offer small (<$10,000) start-up grants annually and are very supportive of trainees, provided the hospital is formally recognized in any presentation or publication. Know what your site has to offer.

10.2.2. **University of Toronto PGME Research Awards**
https://pg.postmd.utoronto.ca/about-pgme/awards/postgraduate-research-award/

10.2.3. **SOGC / Canadian Foundation for Women's Health**
http://cfwh.org/about-us/research-funding/

10.2.4. **The Physicians' Services Inc. (PSI) Foundation** has at least two grant submission deadlines per year with a specific category for resident research.

Appendix A: Framework for Research-Mentor Meetings

The following includes the residency program's expectations regarding Research-Mentor meetings. Please share this section with any potential faculty mentor to ensure that they are aware and able to meet these expectations:

Mentorship includes a minimum of three meetings with the PGY1 in the first 18 months of training and then as needed. The mentor initiates the first meeting with the resident.

1. **At the first meeting**, you (the mentor) would:
   a. Introduce the resident to research in which you are currently involved
   b. Assess the resident's research experience/aptitude and interests. Many residents at this point in their training will say things such as "*I don't have any idea*" or "*I'm interested in Gyne Onc or preterm labour*".
   c. Introduce the resident to colleagues whose research area may be more appropriate for the resident's specific interest.
   d. Set goals for the next meeting 3-6 months later.

2. **At the second meeting**, we expect the resident to have defined an area of interest. Discussion might focus on:
   a. Assessment of the quality of the literature review
   b. How to formulate a research question
   c. Issues of feasibility: is funding necessary? Is the time allotment realistic? Sample size and recruitment issues (generally, we would advise residents not to undertake a project requiring a major funding agency).
   d. Finding a research supervisor: this involves ensuring that the resident has an appropriate research supervisor; making introductions; and providing expert support to the chosen research supervisor, if necessary.
   e. Statistical analysis: The most common help a trainee needs is with statistical analysis, and defining sample size *a priori*.
   f. The timing of the resident's research proposal presentation at Academic Half-day.

3. **The third meeting** will not have a prescribed agenda. It will be to review progress to date.

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Appendix B: Research Project Timeline

The following Research Project Timeline provides a list of benchmarks in completing the scholarly activity requirement before the end of residency training (see http://obgyn.utoronto.ca/rotation-specific-objectives-rso).

At the first planning meeting (orientation) with your research supervisor, it is a good idea to set anticipated completion dates for each of these benchmarks and review/update this timeline as you progress.

Setbacks do occur and starting your research project early in residency will help ensure you can complete it by the end of PGY5. If at any point you are worried about the progress of your project, discuss your concerns with your research supervisor, the Clinical Research Director and/or the Program Director as soon as possible.

	Time Lines	Date Set	Date Completed
1	Hypothesis generation		
2	Literature review		
3	Study design		
4	REB submission/approval		
5	Study implementation		
6	Data collection		
7	Data analysis		
8	Oral presentation complete		
9	Manuscript preparation/submission		