



RESIDENT RESEARCH PREPARATION SEMINARS- FALL 2016

SEMINAR SERIES OBJECTIVES

The learner will:

- Understand the broad steps in conducting research- from initiation to publication
- Acquire skills necessary to design and run a study, contribute to a data analysis plan, and write a scientific publication
- Gain an awareness of available resources to assist with research
- Gain a practical understanding of how research is conducted at the University of Manitoba

PARTICIPANTS:

- PGY 2-4 anesthesiology residents
- Ophthalmology residents
- PGY 1 surgery residents

CONTACT HOURS:

- Nine 45 minute seminars, broken into 5 sessions
- Each session consisting of two 45 min seminars separated by a ½ hour break, except the last session
- 3 sessions in September, 2 sessions in October

INSTRUCTORS:

Alexander Villafranca, PhD Candidate
Dr. Renée El-Gabalawy
Dr. Hilary Grocott

PRIMARY TEXT:

The research guide: A primer for residents, other health trainees, and practitioners, Royal College of Physicians and Surgeons of Canada (2011). Copies for anesthesiology residents are available from the Anesthesia research office. Anesthesiology residents, please contact Linda Girling (204-747-1414) to arrange a pick-up time if you have not yet received a copy. Surgery residents please contact Cidalia Hodnett and Ophthalmology residents please contact Pamela Lowe.

LOCATION:

All sessions for the 2016 year will be held in Theatre A (Lower Level), Basic Medical Sciences building.

ATTENDANCE:

Attendance at all seminars is mandatory. Attendance will be recorded for anesthesiology residents.

WEBSITE:

Lectures and additional resources will be made available online following each seminar at the anesthesiology departmental website:

<http://diamondl.ca/wrha/seminars/seminars.php>

PDF versions of the lectures will be sent to the surgery and ophthalmology departments following the entire seminar series.

SEMINAR SERIES OUTLINE

Day 1- Wednesday September 14, 2016

Starting a research project- Getting oriented and managing your time, 1:00-1:45pm

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Learn how to choose a research mentor
2. Become familiar with research timelines
3. Understand how to manage your time while conducting research
4. Gain an awareness of available resources for research at the U of M

Mandatory readings from primary text:

Chapter 1 Fifteen steps to a successful project and 10 pitfalls to avoid

Chapter 2: Research in residency: Why, when, and how

Chapter 3: Finding a research supervisor

Additional resources: TBA

Planning a research project- Reviewing the literature and developing a research question, 2:15-3:00pm

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Understand where research ideas come from
2. Be able to turn a research idea into a research question
3. Know how to design a study that builds on existing literature
4. Understand the differences between systematic and narrative reviews

Mandatory readings from primary text:

Chapter 6: Conceiving and formulating the research question

Chapter 7: Searching the literature

Chapter 15: Systematic reviews

Additional resources:

Article review template

Links to free reference management software

Day 2-Wednesday September 21, 2016

Designing a research study part 1- Picking levels of measurement and controlling for error and bias, 1:00- 1:45

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Be able to select appropriate levels of measurement
2. Appreciate the range of prospective study designs
3. Identify characteristics of rigorous study designs & causes of false conclusions
4. Differentiate between bias and random error
5. Be able to evaluate the rigor of prospective study designs

Recommended readings from primary text:

Chapter 8: Data: Variables and measurement

Chapter 9: Research methods and design: Bringing the research question to light

Optional readings from primary text:

Chapters 10,11,14,15,16 (as applicable to your specific project or interests)

Designing a research study part 2: Ensuring adequate power and proper use of pilot trials, 2:15-3:00pm

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Understand the purpose of *a priori* power analyses
2. Become familiar with factors affecting statistical power
3. Know the role of pilot trials in clinical research
4. Differentiate between sampling, allocation/randomization, and subject selection
5. Appreciate the unique challenges of retrospective studies

Mandatory readings from primary text:

Chapter 12: Medical record review studies

Chapter 20: Sampling, recruiting, and retaining participants

Chapter 21: Pilot studies

Optional readings from primary text:

Chapter 13: Administrative database research (if applicable to your project)

Additional resources:

Link to free g-power (power analysis) software

Day 3- Wednesday September 28, 2016

Proposing a research study- Preparing ethics submissions and ensuring research integrity- 1:00-1:45pm

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Understand the role of research ethics boards and institutional review committees
2. Be able to describe the requirements of an ethics submission
3. Understand how to conduct your research with integrity
4. Learn how to protect yourself against accusations of plagiarism and other forms of scientific misconduct

Mandatory readings from primary text:

Chapter 18: Getting to “approved”

Optional readings from primary text:

Chapter 17: Writing a research proposal (refer to if writing proposal from scratch)

Chapter 19: Research funding and other resources (refer to if applying for funding)

Additional resources:

[Link to online plagiarism detection tools](#)

Conducting a research study 1- Recruiting and retaining subjects, 2:15-3:00pm

Lecturer(s): Alexander Villafranca, PhD Candidate

Objectives:

1. Be able to recruit research participants effectively and ethically
2. Understand how to retain research participants
3. Be able to develop good working relationships with hospital staff during the conduct of research

Mandatory readings from primary text:

Chapter 23: Managing and monitoring a study

Day 4- Wednesday October 5, 2016

Conducting a research study part 2- Data collection and management, 1:00-1:45

Lecturer(s): Dr. Renée El-Gabalawy

Objectives:

1. Understand the basics of data collection: where to start
2. Understand how to create a successful data collection plan
3. Become familiar with data entry and management techniques
4. Become familiar with the transition from data collection to data analysis

Mandatory readings from primary text:

Chapter 22: Data collection and data management

Chapter 23: Managing and monitoring a study

Additional resources:

Contact info for Anesthesia research office and Biostatistical consulting unit

Conducting a research study- part 2- collecting data properly and data scrubbing

Lecturer(s): Dr. Renée El-Gabalawy

Objectives:

1. Review various forms of study designs
2. Understand how to describe your sample including descriptive statistics, measures of central tendency, and measures of dispersion
3. Become familiar with hypothesis testing including statistical decision making
4. Introduction to interpretation of statistical findings

Mandatory readings from primary text:

Chapter 24: Data analysis: descriptive statistics

Chapter 25: Data analysis: inferential statistics

Chapter 26: Interpreting your research findings

Additional resources:

Contact info for Anesthesia research office and Biostatistical consulting unit

Day 5- Wednesday October 26, 2016

Reporting a research study- Writing with the reviewer in mind, 1:00-1:45pm

Lecturer(s): Dr. Hilary Grocott

Objectives:

1. Become familiar with principles of good scientific writing
2. Learn how to write reviewer friendly papers and abstracts
3. Understand how the peer review process works

Mandatory readings from primary text:

Chapter 28: Writing effective abstracts

Chapter 28: Communicating your research with slide and poster presentations

Chapter 29: How to write a health science paper