



MD Program  
UNIVERSITY OF TORONTO

Office of Faculty  
Development

# Introduction to Health Science Research for New Tutors

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W e l c o m e

# Health Science Research Tutors

YOU have been asked to be an HSR Tutor because of your research experience and enthusiasm for teaching – So, you come to HSR with the all the right ingredients!

# Who are we?

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## Learning Outcome

Describe the HSR course component objectives, structure, content and expectations for HSR Tutors

# Overall Goal of HSR

- Health Science Research (HSR) is an introduction to the principles of research, directed at helping students understand and use research to contribute to improving the health of people and populations, including First Nations, Inuit and Metis peoples, in Canada and globally.
- The HSR component is a two-year component of the Foundations Curriculum

# What is the HSR Component?

- Introduction to the principles of research
- Help students to
  - ***understand*** core research knowledge and develop fundamental research skills
  - ***develop*** new ways to address clinical issues
  - ***use*** research to contribute to improving the health of patients and populations
  - ***become critical consumers of research***



# Being a Consumer of Research

- Students *will* be involved in
  - research or quality improvement activities to some degree at various times in their career.
- Students *may* be involved in research
  - through a project during medical school or residency.
  - as a collaborator on projects with others who are the principal investigator
  - as a principal career activity.
- Whatever ***the students'*** involvement in doing research, they all will be involved as consumers of research



# What is a Consumer of Research?

A consumer of research is someone who has learned to

- Manage the deluge of information available
- Recognize the variety of sources of information/research
- Critically appraise the research
- Identify research that will help you in caring for patients
- Enhance professional development and life-long learning

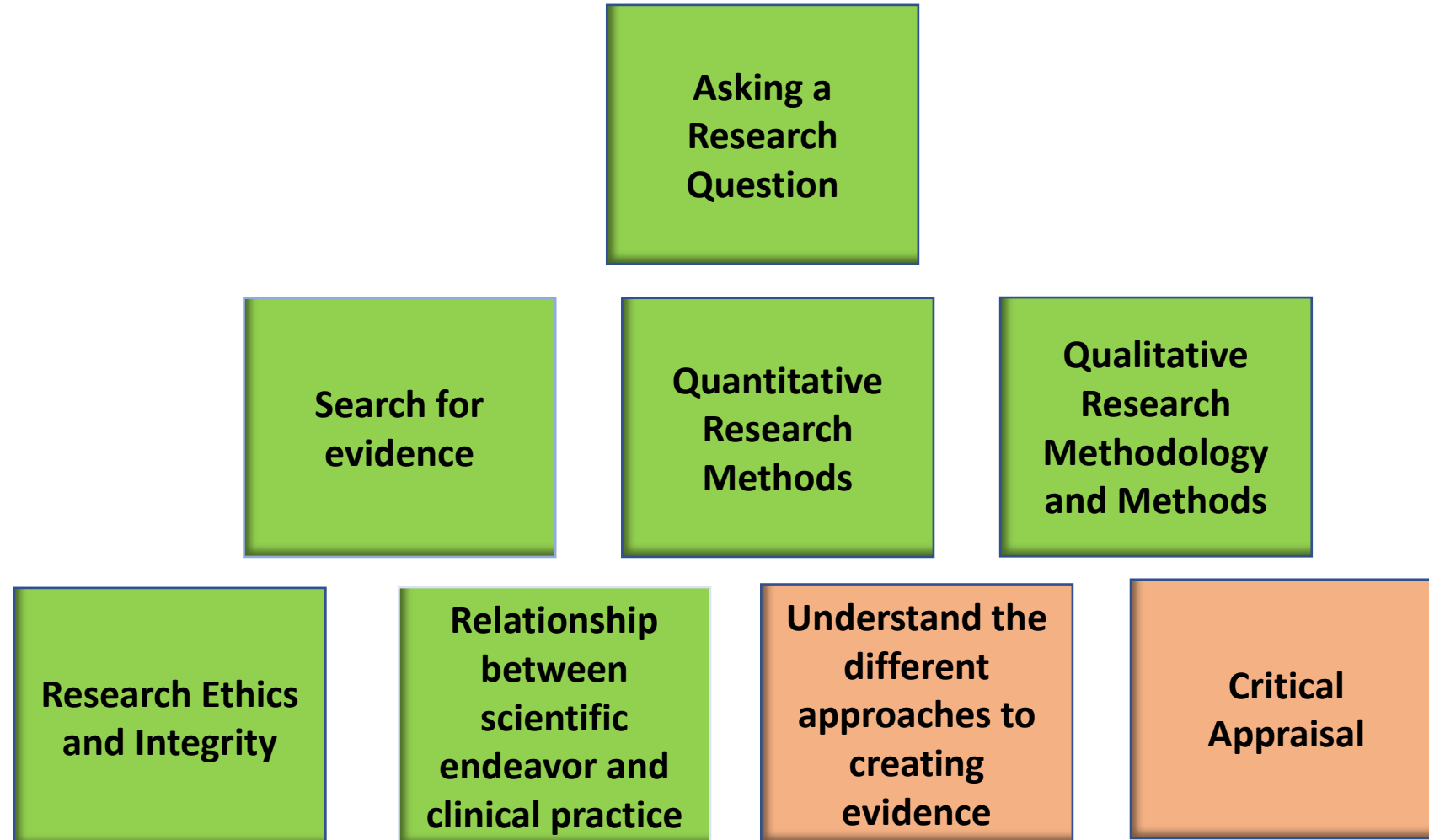


# BUILDING BLOCKS

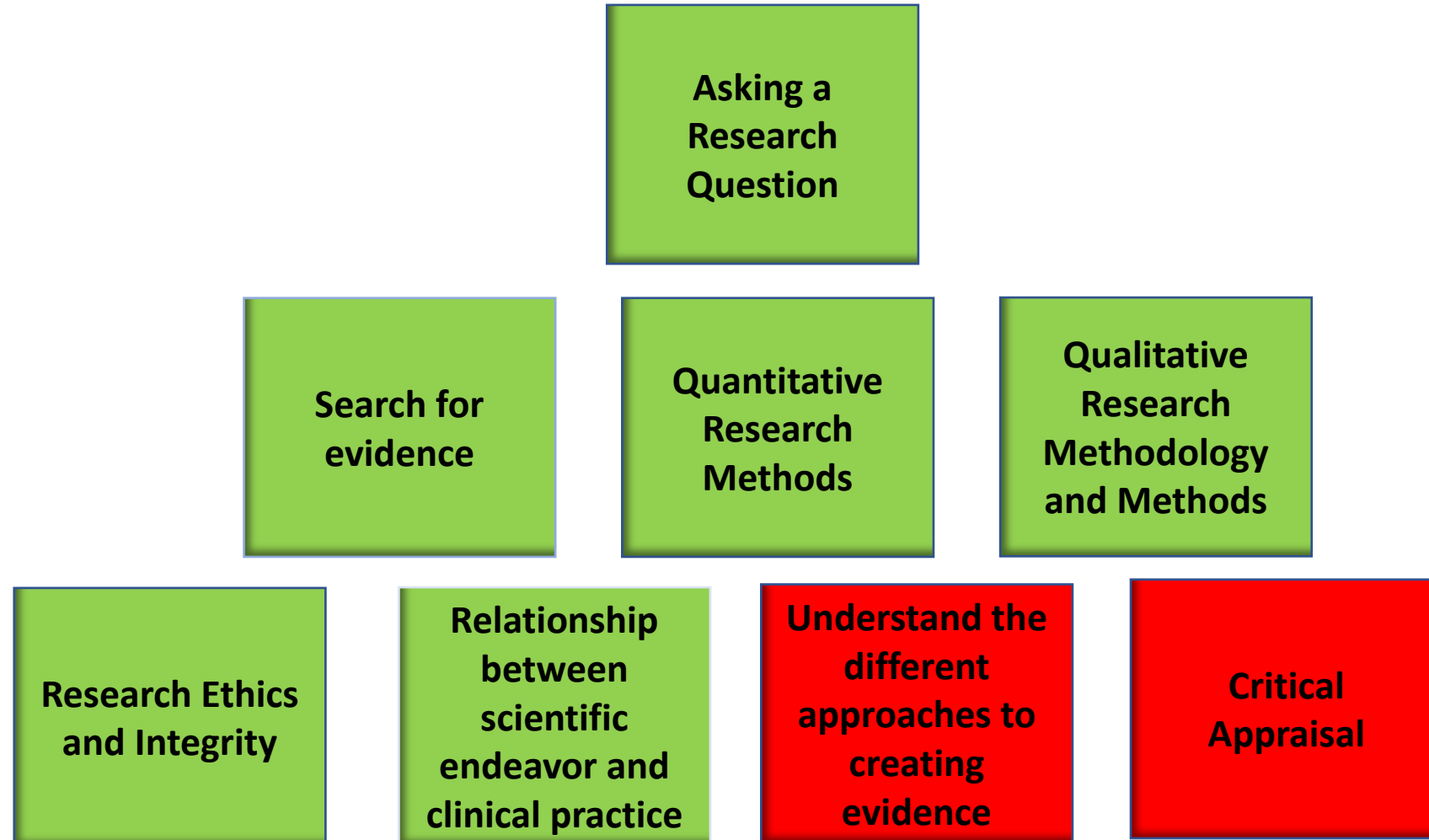
But, in order to be successful with this process students need the HSR building blocks



## First Year of HSR



## Second Year of HSR



# HSR Component Structure

- Integrated two-year component of the Foundations Curriculum
- **First year of HSR**
  - Interactive large group sessions
  - 7 themes
  - Each theme is covered over a period of ~ 3-6 weeks
  - Each theme concludes with large group session 1-2 hours
- **Second year of HSR**
  - Small group tutorials
  - Critical Appraisal of articles that are integrated into the Foundation CBLs
  - Practicum exercise

# **HSR Small Group Tutorials**

## **HSR Year 2**

## HSR Co-tutor model

- Co-tutor model- 2 tutors/group (wherever possible)
- Tutors from different research backgrounds (if possible)
- Students with specific areas of expertise can also help to facilitate tutorial content
- 10-12 students/groups ~ 10/group
- You will have the same students in your tutorial for all of HSR Year 2

# HSR Co-tutor model: How does it work?

## Possible structure of HSR co-tutor model

1. Both HSR tutors attend all tutorials
2. HSR Tutors can share some tutorials and divide up other tutorials – based on knowledge base & comfort or personal schedules
3. Divide tutorials - based on knowledge base & comfort or personal schedules



Can you let us know what you decide?

[hsr.ume@utoronto.ca](mailto:hsr.ume@utoronto.ca)



## HSR Co-tutor model

- Co-tutors will be notified of their pairings in before the end of August.
- Groups will be sent to you by HSR Admin or the Academy shortly



# What is the role of the HSR Tutor?

- Guide students to **develop and consolidate core research skills** including: critical appraisal, problem solving and critical thinking.
- Guide students to **develop life-long learning skills**.
- Stimulate critical thinking:
  - Use vignettes from your experience
  - Posing questions
  - Explaining pathophysiology, etc.
- Provide ongoing feedback on students' skills
- Facilitate Q&A
- Evaluation

# HSR Small Group Tutorials

## Small group tutorials

- Total of 8 tutorials (one facilitated by Librarians) so there are 7 HSR2 tutorials through out the school year facilitated by the HSR Tutors
- 2 hours each, specific Wednesdays from 1:00 to 3:00
- **Tutorial focuses on**
  - (i) **Critical appraisal skills** integrated into the CBL– using CASP checklist where indicated
  - (ii) Supporting the development of the **Practicum Exercise**

# Critical Appraisals

- Each student will be expected to complete 2 critical appraisals of preselected research studies/manuscripts/articles aligned with the CBL of the week.
- The students should use the appropriate CASP tool checklist (i.e., the CASP specific tool will depend on the type of study-RCT, cohort, qualitative etc.) to help guide the critical appraisal process.
- All critical appraisals will be done by groups of 2-3 students.
- The groups will be expected to discuss the critical appraisal of the article during the tutorial to/with other members of the tutorial group – (may use PowerPoint presentation).
- This process will enable the students to assess the study's validity and relevance to the CBL patients.
- All critical appraisal presentations will be assessed by the HSR tutor in real time during the tutorial.

### HSR CRITICAL APPRAISAL RUBRIC

**VALIDITY**

**RESULTS**

**RELEVANCE  
TO CBL**

**PRESENTATION  
STYLE**

**Q & A**

**GLOBAL**

CRITERIA BEING ASSESSED	Unsatisfactory	Below Expectations	Meets Expectations	Above Expectations	Outstanding
VALIDITY	<ul style="list-style-type: none"> <li>The students' failed to address and justify all elements of the <b>validity</b> component of the of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified some elements of the <b>validity</b> component of the CASP tool and inadequately addressed and justified other elements.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified all elements of the <b>validity</b> component of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying some elements of the <b>validity</b> component of the CASP tool and adequately addressed and justified other elements.</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying all elements of the <b>validity</b> component of the CASP tool.</li> </ul>
RESULTS	<ul style="list-style-type: none"> <li>The students' failed to address and justify all elements of the <b>results</b> component of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified some elements of the <b>results</b> component of the CASP tool and inadequately addressed and justified other elements.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified all elements of the <b>results</b> component of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying some elements of the <b>results</b> component of the CASP tool and adequately addressed and justified other elements..</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying all elements of the <b>results</b> component of the CASP tool.</li> </ul>
APPLICATION TO THE CBL ("results help locally")	<ul style="list-style-type: none"> <li>The students' failed to address and justify all elements of the <b>application</b> component of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified some elements of the <b>applications</b> component of the CASP tool and inadequately addressed and justified other elements.</li> </ul>	<ul style="list-style-type: none"> <li>The students' adequately addressed and justified all elements of the <b>application</b> component of the CASP tool.</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying some elements of the <b>application</b> component of the CASP tool and adequately addressed and justified other elements.</li> </ul>	<ul style="list-style-type: none"> <li>The students' excelled in addressing and justifying all elements of the <b>application</b> component of the CASP tool.</li> </ul>
PRESENTATION STYLE	<ul style="list-style-type: none"> <li>Little to no contribution by all group members to the presentation.</li> <li>Poor organization &amp; delivery.</li> <li>Poor engagement of the audience.</li> </ul>	<ul style="list-style-type: none"> <li>Poor contribution by all group members to the presentation.</li> <li>Fair organization &amp; delivery.</li> <li>Occasionally engaged the audience.</li> </ul>	<ul style="list-style-type: none"> <li>Good contribution by all group members to the presentation.</li> <li>Adequate organization &amp; delivery.</li> <li>Adequate engagement of the audience.</li> </ul>	<ul style="list-style-type: none"> <li>Very good contribution by all group members to the presentation.</li> <li>Very good organization &amp; delivery.</li> <li>Nearly always engaged the audience.</li> </ul>	<ul style="list-style-type: none"> <li>Excellent contribution by all group members to the presentation.</li> <li>Excellent organization &amp; delivery.</li> <li>Always engaged the audience.</li> </ul>
RESPONSE TO QUESTIONS	<ul style="list-style-type: none"> <li>Did not demonstrate appropriate knowledge of the topic.</li> <li>Did not respond accurately and appropriately to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Occasionally demonstrated knowledge of the topic and responded inaccurately or inappropriately to some questions.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrated appropriate knowledge of the topic and responded accurately and appropriately to some questions better than others.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrated very good knowledge of the topic and responded accurately and appropriately to all questions.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrated excellent knowledge of the topic and responded accurately and appropriately to all questions.</li> </ul>
OVERALL GLOBAL ASSESSMENT	<ul style="list-style-type: none"> <li>Overall the critical appraisal was unsatisfactory</li> </ul>	<ul style="list-style-type: none"> <li>Overall the critical appraisal was below expectations</li> </ul>	<ul style="list-style-type: none"> <li>Overall the critical appraisal met expectations</li> </ul>	<ul style="list-style-type: none"> <li>Overall the critical appraisal was above expectations</li> </ul>	<ul style="list-style-type: none"> <li>Overall the critical appraisal was outstanding</li> </ul>
COMMENTS	<ul style="list-style-type: none"> <li>Please provide the student with narrative feedback on this assessment, especially if the rating is "incomplete" or "below expectations" on any of the criteria being assessed.</li> </ul>				

# Critical Appraisals

- For the two tutorials addressing
  - QI – Quality Improvement
  - the Evaluation and Usefulness of Guidelines
- the critical appraisal will be done as part of the tutorial by the full group (as individuals or in small groups)



# Goals of Practicum Exercise

1. Gain supervised experience in preparing a research protocol
2. Apply core research knowledge to the development of the research protocol
3. Explore areas that are of interest
4. Independent and personalized research experience intended to build upon, enhance and broaden their research skills.
5. It is not an expectation that the students will do the research project for HSR2.



# 1:1 Student and Tutor Meetings

- Each student will need to meet with their HSR tutorial leader before mid-October
- One-on-one meetings (Zoom or in person)
- Purpose of meeting is to discuss the focus of the practicum, learning plan, deliverables and evaluations.
- Students should provide their tutor with their curriculum vitae prior to meeting with them to help tutor meet the student's learning objectives and support the student's choice of an interesting and personally relevant research question
- Students should also complete the "Brain storming" sheet and bring this to the 1:1 meeting

# Deliverables for the Practicum Exercise

- At each Tutorial, students should be prepared to discuss the progress of their practicum exercise (including the one slide for their oral presentation) and ask for help with any problems and concerns they may have
- Students should finalize and submit their research question to their Tutor for approval (early November)
- Submit a written Progress report to their tutor by early December for Feedback (by early January)
- Submit their final written report in early March (to be evaluated and returned to students by early April)
- Oral presentation of their research proposal in a 3-minute thesis Format late April

# Practicum Exercise Progress Report Feedback Form

Research Component	Criteria	Tutor's Comment/Feedback
<b>Title*</b>	Is there a clearly articulated and appropriate descriptive title? Does the title provide the focus of the proposed research?	
<b>Background*</b>	Did the student summarize the background of their practicum exercise?  Is the student demonstrating an ability to understand the literature related to the topic?  Is the student beginning to demonstrate an ability to critically appraise, interpret, summarize and synthesize the relevant literature?  Has the student begun to identify the gaps in previous research that led to the development of proposed research?  Did the student summarize why they chose this research topic?	
<b>Research Question*</b>	Did the student present a well-constructed research question?	
<b>Research Design and Methods*</b>	Has the student briefly described and justified the proposed research design and methodology?  Is the research methodology aligned with proposed research question?  Has the student justified the proposed methodology?  Has the student described the advantages and limitations of the research method(s) chosen to address their proposed research question?	
<b>Data Analysis</b>	Has the student begun to describe/identify the techniques that would be used to analyze the data and the reasons for these choices?  Has the student begun to describe/identify the limitations to the proposed analysis?	
<b>Research Ethics Issues</b>	Has the student begun to describe/identify the key ethical issues and how these will be addressed and mitigated?	
<b>Knowledge Translation</b>	Has the student begun to describe/identify a plan for knowledge translation?	
<b>Implications</b>	Has the student begun to describe/identify how and in what way this research proposal will refine, revise or extend existing knowledge in the subject area under investigation?	

# Practicum Exercise – Written Report

## Develop a “research protocol”

- Title
- Research Question
- Background and Significance
- Design and Methods
- Data Analysis
- Research Ethics Considerations
- Knowledge Translation Issues
- Implications

**Written format~ 2,500-3,000 words (5 -6 pages).**



**Instructions for Tutor:**

1. Please complete the evaluation for each evaluation criterion.
2. The marking schema for each criterion is outlined.
3. Please provide comments.

**Student Name:**

\_\_\_\_\_

**Tutor:**

\_\_\_\_\_

**Title of Research Protocol:**

**Academy:**

**Name(s) of research collaborators (if any):**

Research Components	Evaluation Criteria	Marking Schema for the Overall Research Protocol					
<b>Title of Practicum Exercise/Research</b>	<ul style="list-style-type: none"><li>• There is a clearly articulated and appropriate descriptive title.</li><li>• The title provides the focus of the proposed research.</li><li>• The title includes the key ideas.</li></ul>	Not submitted (Missing)	Unsatisfactory	Below Expectations	Meets Expectations	Exceeds Expectations	Outstanding
<b>Research Question</b>	<ul style="list-style-type: none"><li>• Formulated a well-constructed research question</li></ul>						

# Practicum Exercise – the Oral Presentation

- 3MT -“3 Minute Thesis” format
- 3-minute talk: 1 slide
- Aimed at a more general audience (similar to a summary presentation to a funding agency)
- Evaluation based on communication, comprehension, and engagement
- Evaluation is done during the tutorial in real time



# HSR PE “3-Minute Thesis” Oral Presentation

	Not Submitted (Missing)	Unsatisfactory	Below Expectations	Meets Expectations	Exceeds Expectations	Outstanding
<b>Communication</b> <ul style="list-style-type: none"> <li>- Did the presenter use language and terminology that was clear and understandable?</li> <li>- Was the pace of the talk effective?</li> <li>- Did the presenter use non-verbal communication (i.e., eye contact, voice modulation, body language, etc.) effectively?</li> <li>- Did the slide enhance, rather than detract from, the talk — was it clear, legible, and concise?</li> </ul>						
<b>Comprehension</b> <ul style="list-style-type: none"> <li>- Did the talk help you to understand the research being undertaken and its potential impact?</li> <li>- Did the presenter clearly outline the nature and purpose of their research?</li> <li>- Did the presenter clearly indicate what is fascinating or compelling about their research?</li> <li>- Did the talk follow a logical sequence?</li> </ul>						
<b>Engagement</b> <ul style="list-style-type: none"> <li>- Was the talk engaging?</li> <li>- Did the talk inspire you to want to know more?</li> <li>- Did the presenter convey enthusiasm for their work?</li> <li>- Did the presenter capture and maintain your attention?</li> </ul>						
<b>Global Assessment</b> <ul style="list-style-type: none"> <li>- Final holistic indicator of how the student performed “overall” without judging the component parts.</li> <li>- Overall, the presentation was...</li> </ul>						

# New For This Year

- During the Oral Presentations, the tutor(s) and students will select one student's oral presentation from that tutorial group, to be put forward (with the agreement of the selected student) to submit their oral presentation for consideration for each Academy/GDip 3MT competition
- From each Academy/Gdip, one or two students will be selected (with the agreement of the selected students) to submit their oral presentation for consideration for the overall UofT second year HSR 3MT competition



# Professionalism Forms

*Should complete one for each Term*

Professionalism Assessment

	Meets very few applicable criteria or has significant deficiencies	Meets some applicable criteria with minor deficiencies	Usually meets applicable criteria with no deficiencies	Meets most applicable criteria and is exemplary in some areas	Consistently meets all applicable criteria and exemplary in many areas	Was not in a position to assess
	1	2	3	4	5	N/A
<p><b>Altruism</b></p> <ul style="list-style-type: none"> <li>• Demonstrates sensitivity to patients' and others' needs, including taking time to comfort the sick patient</li> <li>• Listens with empathy to others</li> <li>• Prioritizes patients' interests appropriately</li> <li>• Balances group learning with his/her own</li> </ul>						
<p><b>Duty: Reliability and Responsibility</b></p> <ul style="list-style-type: none"> <li>• Fulfills obligations in a timely manner, including transfer of responsibility for patient care</li> <li>• Informs supervisor/colleagues when tasks are incomplete, mistakes or medical errors are made or when faced with a conflict of interest</li> <li>• Provides appropriate reasons for lateness or absence in a timely fashion</li> <li>• Prepared for academic and clinical encounters</li> <li>• Actively participates in discussions</li> <li>• Fulfills call duties</li> <li>• Timely completion of MD Program and hospital registration requirements</li> </ul>						
<p><b>Excellence: Self-improvement and Adaptability</b></p> <ul style="list-style-type: none"> <li>• Accepts and provides constructive feedback</li> <li>• Incorporates feedback to make changes in <u>behaviour</u></li> <li>• Recognizes own limits and seeks appropriate help</li> <li>• Prioritizes rounds, seminars and other learning events appropriately</li> </ul>						
<p><b>Respect for Others: Relationships with Students, Faculty and Staff</b></p> <ul style="list-style-type: none"> <li>• Maintains appropriate boundaries in work and educational settings</li> <li>• Establishes rapport with team members</li> <li>• Dresses in an appropriate manner (context specific)</li> <li>• Respects donated tissue; cadavers</li> <li>• Relates well to patients, colleagues, team members, laboratory staff, service, and administrative staff</li> </ul>						
<p><b><u>Honour and Integrity</u>: Upholding Student and Professional Codes of Conduct</b></p> <ul style="list-style-type: none"> <li>• Accurately represents qualifications</li> <li>• Uses appropriate language in discussions about cases and with or about patients and colleagues</li> <li>• Behaves honestly</li> <li>• Resolves conflicts in a manner that respects the dignity of those involved</li> <li>• Maintains appropriate boundaries with patients</li> <li>• Respects confidentiality</li> </ul>						

# Resources

## 1. Elentra – what is it?

- An integrated online teaching and learning platform for MD program learners, instructors and curriculum administration
- Please contact HSR Admin ([hsr.ume@utoronto.ca](mailto:hsr.ume@utoronto.ca)) with your **UTORid** and we will get you connected.
- Tutor Guides are posted on Elentra

## 2. HSR Student Handbooks on Elentra

- First and second year handbooks are available

# Resources

3. One week prior to your tutorial you will receive a **TUTOR GUIDE** via email – will include
  - List of the learning objectives and self- learning modules for the students
  - The articles for critical appraisal during that tutorial and a completed CASP Tool for the article
  - An outline for the required sections of the tutorial
  - A list of things to complete before the end of the tutorial and reminders of upcoming dates/requirements

## 4. HSR Educafes: Just-in-time Faculty Development

# HSR Educafes = Faculty Support

## Key Features

Occurs between noon-1 pm

1 hour before each HSR tutorial

Non-mandatory but very, very useful

Can be used for CME credit

# Resources

## 5. Admin support

Academy Admin

Central HSR Admin [hsr.ume@utoronto.ca](mailto:hsr.ume@utoronto.ca)

## 6. OFD website - <https://meded.temertymedicine.utoronto.ca/hsr-tutors>

7. Methodology Experts – for both quantitative and qualitative methodologies – sessions in January and February for students

## 8. Course Director – [gwen.jansz@unityhealth.to](mailto:gwen.jansz@unityhealth.to)

**We welcome your input...**

**Other...suggestions are welcome**

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**HSR Admin**

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THANK  
YOU