

RESEARCH SCHOLAR PROGRAM 2017
SUPERVISOR/PROJECT INFORMATION FORM



Due on or before **October 21 2016**. Forms received after this date will not be posted on the website.

SUPERVISOR INFORMATION

Supervisor Name: Donald Redelmeier

Mailing Address: Sunnybrook G-151, 2075 Bayview Ave, Toronto M4N 3M5

Telephone Number: 416-480-6999

Email Address: dar@ices.on.ca

Degree (MD, PhD, MD/PhD): MD, FRCPC, FACP, MS(HSR)

Academic Rank: Professor of Medicine

Field of Research: Medical Decision Science; Motor Vehicle Trauma

Graduate School Appointment (IMS, IHPME etc.): Health Policy Management & Evaluation

Please note that you must be appointed to the SGS in order to be a supervisor in the Scholar Program

Research Institute Affiliations: Sunnybrook Research Institute; Institute for Clinical Evaluative Sciences

Allocation of student contact time: 1-4 hours per week

Do you have a student that you have already agreed to work with? (not yet)

Please note, you may go ahead with a self-initiated project with a student of your choosing. If you choose this option, your project will not be posted online, meaning it will not be open to student applicants.

PROJECT INFORMATION

Project Title: Medical Decision Science

Project Description (max 500 words):

My group conducts an eclectic program of research focusing on how people reason, formulate judgments, and make decisions. We have conducted multiple studies on errors in decision making, with particular attention to general internal medicine. A secondary theme examines motor vehicle trauma, a domain where mistakes in reasoning can have irreparable consequences. The goal is to learn from mistakes to improve daily medical care.

Most projects are based on statistical methods and other dry-bench methodology. Recent projects with CREMS trainees explored acute injuries in low-income mothers (Will Chan), physician warnings for unfit drivers (Chris Yarnell), traffic crashes during pregnancy (Sharon May), organ donation after traumatic brain injury (Jason Woodfine), and optical illusions while driving (Sheharyar Raza). Future projects depend on the interests of the student and ongoing priorities.

If human subjects are involved, has Ethics been obtained?

☒ YES

Do you expect this work will be published within 20 months?

☐ YES

Student's Roles / Responsibilities (Please be as specific as possible) Please indicate who will serve as the student's direct report. (PI, PDF, PhD student, technician etc...):

The student will be involved in all parts of the research including conception, design, literature review, ethics submissions, data collection, results interpretation, manuscript preparation, and scientific peer review. The student is also expected to integrate with the full academic group, attend seminars, and give feedback to others on other projects.

The specific project for this student examines the role of visual perception on traffic risks. Most real-time data used by motorists for safe driving involve eyesight (with lesser contributions from the steering wheel, control pedals, and seat cushion feedback). As such, optical illusions can arise that, we hypothesize, may contribute to fatal crashes in otherwise healthy motorists.

One specific optical illusion is fallible depth perception. Our theory is that bright illumination of surrounding landscapes may lead motorists to misgauge distances and misjudge speed. This visual illusion is analogous to aerial perspective bias for artists, aviators, and mountaineers during bright sunlight. In traffic, the same optical illusion may contribute to excess speeding on bright sunny days with a subsequent loss of control over the vehicle.

We plan a series of experiments involving both laboratory simulations and epidemiologic field data to test whether serious driver errors are increased during bright sunny weather. If true, the findings might inform public safety messaging, roadside traffic control, driver education, and other countermeasure to prevent serious motor vehicle crashes.

The overall project for this student requires the full 20 months for completion (perhaps a bit longer due to vagaries of peer-review medical journals). The project will be judged complete on publication of an article and addressing follow-up

knowledge translation activities (scientific presentations, letters-to-the-editor, media interviews, academic dialogue, community outreach).

The student will report directly to me. Of course, the student is welcome to interact with other trainees, technicians, statisticians, and faculty at the Institute for Clinical Evaluative Sciences.