Name and Title: Dr. S. Joseph Kim  
Department: Medicine (Division of Nephrology)

TITLE OF RESEARCH PROJECT: Examining the Metrics used in Assessing the Cumulative Exposure of Immunosuppression in Solid-Organ Transplant Recipients

Number of 299Y Spots: 2  
Number of 399Y Spots: 2

OBJECTIVES AND METHODOLOGY:
Solid organ transplants are definitive therapies for a variety of end-stage diseases. Immunosuppression has improved graft survival but leaves the patient on a strict post-transplant drug regimen. Fluctuations in a patient’s drug therapeutic levels may be the result of number of reasons which include but not limited to, in-appropriate dosing by the clinician, physiological factors such as drug to drug interactions and non-adherence (behavioural traits on the part of the patient). A rationale therapeutic decision by clinicians is often needed to ensure optimal clinical outcomes for the patients under their care. However, this decision will depend on the comprehensive understanding of the ratio between efficacy and toxicities of these medications.

Project objective is as follows:  
Conduct a knowledge synthesis via a narrative review on the metrics and methods of assessing cumulative immunosuppression in solid-organ transplant patients. In addition, understanding the mechanism actions and identify strategies to prevent and manage problems that are expected to arise as a result of such therapies such as toxicity, infection rates and carcinogenicity will be examined.

DESCRIPTION OF STUDENT PARTICIPATION:  
This ‘in-house’ pioneering and comprehensive training course for undergraduate students consisting in formal seminars, discussion forums, and direct health/research experience, would provide an overview for students in enabling them to gain a general understanding in the area of clinical research and apply the knowledge acquired in research-related tasks in the field of kidney transplantation and overall patient care. Over the course of academic year (or summer session), students would be introduced to the various sub-disciplines that have a direct impact on overall kidney transplant care; a few of which include:

- Basic sciences
- Bioethics
- Clinical and outcomes research
- Clinical epidemiology and biostatistics
Candidates who complete the course will be well poised to advancing research development and clinical/social application of emerging discoveries in the field of kidney transplantation.

**Educational Activities:**

- Two (2) hours spent on continuing education per week (includes weekly in-house seminars as well as at least one (1) hour a week of additional educational activity within the transplant program). Such educational transplant program activities include education rounds, journal club, and lab meetings.

- An opportunity for participation in at least one (2) in-patient transplant ward-rounds and/or clinic session with a Staff Transplant Nephrologist will be available for all students during the regular academic year (September–April) or summer session (May – August)

**Research Related Activities:**

- Training in the assessment of pertinent medical and health literature using web-based medical and health journal libraries and databases for the purposes of study protocol development.
- Rigorous review of patient medical charts coupled with on-site training in medical terminology.
- Applying auditing practices and accurate entry of information into a custom-based clinical/research database for the purposes of relevant data analysis pertaining to their mini-research project.
- Training in project (study) presentation reporting/manuscript preparation for stakeholders within the scientific establishment and public in general.

**MARKING SCHEME (assignments with weight and due date):**

Course evaluation will be based on the completion of all the following:

- Seminars/Meetings and clinic/hospital ward observation sessions. Continuous - (15%).
- Comprehensive background literature review paper on the research project. Due date - June 10, 2019 - (15%).
- *Student* journal recording research learning experiences. Continuous - (10%). **U OF T Req.**
- Two-page interim report detailing research experience by the student. Due date - June 10, 2019 - (5%). **U OF T Req.**
- The Course Director will equally complete a two-page written assessment of the student’s progress and discuss it with them before the deadline for dropping courses with penalty. Due date - TBA **U of T Req.**
- Data collection/abstraction and operations manual development exercises. Continuous - (30%).
- Presentation of final research proposal at weekly meetings. Due date - July 22, 2019 - (5%).
- Complete research paper draft for internal review. Due date - August 2, 2019 (20%).