# Funded PhD Research Opportunity

2022-Sept-14

The Ottawa Hospital Research Institute (OHRI) in conjunction with the University of Ottawa and Carleton University is currently recruiting for a 4-year PhD position in Medical Imaging and Artificial Intelligence based in Ottawa, Canada. The PhD is fully funded by a CIHR grant in the Department of Nephrology.

Located in the bilingual and multicultural capital of Canada, OHRI is among one of Canada's top 10 health research institutes. Research will take place at The Ottawa Hospital, a world-class health-care organization and leader in research and innovation.

## Details

In Canada, as in other developed nations, the prevalence of kidney disease is on the rise. Approximately 50% of patients with chronic kidney disease (CKD) suddenly progress to kidney failure in an unplanned fashion. Unplanned dialysis is associated with poorer patient outcomes and with increased financial costs to the healthcare system. The high rate of unplanned dialysis occurs even among CKD patients routinely followed in specialized nephrology clinics. This reflects an inability, even among nephrologists, to reliably identify CKD patients likely to require imminent dialysis. Our overarching goal is to develop a precision medicine strategy that will enhance the quality and efficiency of care for the advanced CKD population.

We are collaborating on a research project to predict kidney failure in patients with chronic kidney disease. We have developed preliminary predictive models and wish to advance the research into a clinical application. Hence, we are looking for a PhD candidate with interest in artificial intelligence in medicine to further develop these models and integrate them into the clinical setting. Aspects of this research include machine learning, explainable models, comprehensive reporting, data quality assurance, data imputation, automation, and integration with electronic medical record systems.

This research will be performed in a hospital setting with an opportunity to revolutionize patient care.

The PhD will be co-supervised by Ran Klein, PhD (http://www.ohri.ca/profile/RanKlein) from the University of Ottawa, and Dr. James Green (http://www.sce.carleton.ca/faculty/green/green.php) from Carleton University. Close collaborators include:

Dr. Gregory Hundemer, Nephrologist, Principle Investigator

Dr. Ayub Akbari, Nephrology, Co-Principle Investigator

Dr. Chris McCudden, Clinical Biochemist, Collaborator

## Eligibility Requirements

Applicants should have completed a MSc. Degree in data science, computer science, biomedical engineering, or related field. Applicants should ideally have experience in machine learning methods and temporal medical data, and at least one of the following machine learning libraries in Python: scikit-learn, Keras, Tensorflow, or PyTorch.

PhD Candidates can start as early as possible. Preference will be given to applicants currently residing in Canada under the principals of equality, diversity, and inclusion.

## Application Instructions

Please submit your CV and a cover letter to rklein@toh.ca. Applicants that fit the job requirements will be contacted individually for an interview.