



## RACP Foundation Research Awards

### FINAL REPORT

<b>Project / Program Title</b>	Master's in biomedical informatics (Harvard University)	
<b>Name</b>	Dr Chang Ho Yoon	
<b>Award Received</b>	2020 Rowden White Travelling Fellowship	
<b>Report Date</b>	30/03/2021	
<b>Funding Period</b>	Start Date:	29/08/2019
	Finish Date:	28/05/2020

#### PROJECT SUMMARY

The Rowden White Travelling Fellowship enabled me to travel to Boston and undertake a Master's of Biomedical Informatics at Harvard University. This course provided considerable breadth and flexibility to explore the computational, statistical, and creative building blocks of data science, coupled with more modern machine learning techniques. Perhaps more importantly than the course itself, the year-long experience was immeasurably enriched by the establishment of lifelong friendships and research collaborators, exposure to pioneering endeavours of the highest order, and total immersion in a city brimming with academic, artistic and sporting might.

Thanks to the RACP, I was able to undertake an unforgettable year that placed me in great stead for the PhD I am currently pursuing at Oxford.

#### PROJECT AIMS / OBJECTIVES

Through the Master's in Biomedical Informatics at Harvard University, I aimed to learn a diverse array of skills (computational, statistical, machine learning) in preparation for a PhD focused on the impact of antimicrobial resistance at both population and patient-specific levels. This PhD will involve the manipulation of large datasets ("big data"), and will necessitate the application of advanced computational, statistical and machine learning techniques. Therefore, the course was most suited to planting and nurturing the myriad of skillsets that such research necessitates.

Now that I am 6 months into a PhD at the University of Oxford, I can confidently claim that the year in Boston was cognitively challenging and engaging, and thrust me out of my comfort zone with great frequency.

#### SIGNIFICANCE AND OUTCOMES

A major outcome of this project was that I was able to compete for, and was ultimately awarded, a Wellcome Trust PhD Fellowship at the University of Oxford.

Furthermore, a research project that I undertook on the subject of applying machine learning techniques to predict antibiotic resistance in Mycobacterium tuberculosis was selected to be

presented at a prestigious Machine Learning in Healthcare conference (in Durham, North Carolina) in 2020.

### **PUBLICATIONS / PRESENTATIONS**

1. Wellcome Trust PhD Fellowship at the University of Oxford.
2. Presentation of research in the Machine Learning in Healthcare conference 2020 (Durham, North Carolina).
3. Two additional research papers published; 1 undergoing final journal editorial revision; and at least 2 in the final stages of manuscript preparation.