

**Prof Alan Halpern**, Dermatologist and internal Medicine specialist from Memorial Sloan Kettering Hospital in New York was our CRE researcher in residence in 2017.

He presented on the topic **“Algorithms and robots, will they play a role in melanoma early detection”**

Prof Halpern presented data to show that up to 70% of melanomas are first noticed by the person themselves. It is therefore important that people are vigilant to changes on their body.

### **A fine line between under- and over-diagnosis**

Dermatology is a medical specialty that relies heavily on the visual assessment of skin lesions. Although there are some rules such as the ABCD rule that can help determine whether a skin lesion is a skin cancer, definite diagnosis is often difficult without pathology.

Prof Halpern state that there is a fine line between under- and over-diagnosis. The risk of under-diagnosis can be dire; hence some medical practitioners take the over-cautious route as missing a melanoma would lead to unforgiving consequences. Sometimes lesions that are removed are not suspicious causing frustration for the patient. On the other hand, over-diagnosis can lead to patients feeling like they are “Swiss cheese.” The decision to excise a skin lesion should involve the medical practitioner’s expertise and the concerns of the patient.

### **Using technology for the prevention and early detection of skin cancer**

There seems to be a shift towards a reliance on mobile phones in the dermatology field. Mobile teledermoscopy is a promising new technology for engaging people in the prevention, detection and management of skin cancer. Mobile teledermoscopy uses a smartphone, mobile health application (app) and detachable dermatoscope to magnify and photograph skin lesions to remotely send to a skin cancer specialist or dermatologist. The medical practitioner then diagnoses the lesion using the images.

Artificial intelligence is another up and coming technology which uses algorithms to calculate diagnoses. Using algorithms to diagnose skin lesions is an exciting area of research. Some concerns have been raised about the accuracy and over-reliance on technology. In particular, corporate stakes in these exciting technological advances are high, and this may lead to over-enthusiastic promotion of technology before it is really ready for the clinic.