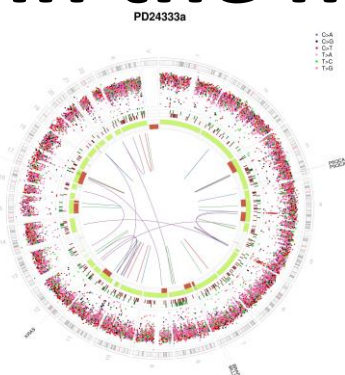


Mutational processes in the human genome

Dr Serena Nik-Zainal

7.30pm, Monday 19th June, 2017

Churchill College, Storey's Way,
Cambridge CB3 0DS



Event Information

CSAR lectures are open to all: CSAR members are admitted free, pupils and students may register for free membership at the lecture reception desk. Non-members are asked to register and make a nominal contribution of £3.00.

Location: Wolfson Lecture Theatre, Churchill College, Storey's Way, Cambridge, CB3 0DS

Refreshments: Coffee and biscuits are available in the Wolfson Foyer from around 7pm. Before lectures, attendees can use the college canteen for dinner (from 5:45pm) and, after lectures, the bar. Cash can be used at both.

Car parking: Attendees may park in the Senior Car Park on Churchill Road off Storey's Way. More parking is available further along Churchill Road, and in the Möller Centre at the far end.

Membership: There is a range of membership options; just ask at the reception desk in the lecture theatre foyer before the talk, or visit our website, csar.org.uk.

Mutational processes in the human genome

“At conception, the human genome formed from the amalgamation of egg and sperm needs to be copied thousands of times to form the multicellular human being that is you. That human genome does not stay immutable. It is constantly changing, or mutating, due to the forces of nature that are constantly acting upon our cells.

“A cancer genome provides a unique opportunity to view the historic mutagenic activity that has occurred throughout the development of a tumour. For a long time driver mutations believed to be causative for cancer were the main focus of research, but passenger mutational signatures - imprints of the mutational processes of DNA damage and DNA repair operating during tumorigenesis - are also biologically informative. In this lecture, I provide a synopsis of the concept of mutational processes in human cells, describe the insights that we have gained through combinations of computational analysis and experiments in human cell-based systems, and showcase how we have developed the concept into applications that we hope to translate into clinical utility in the near future”.

Dr. Serena Nik-Zainal is a CRUK Advanced Clinician Scientist exploring patterns of mutations or *mutational signatures* that arise in human cells to understand how DNA damage and DNA repair processes contribute towards aging and cancer. She is also an Honorary Consultant in Clinical Genetics. Serena hunts for mutation signatures in large cancer datasets using computational approaches. She explores these signatures through cell-based model systems and runs a clinical project, Insignia (www.mutationsignatures.org), recruiting patients with DNA repair/replication defects, aging syndromes, neurodegeneration, and people exposed to environmental/occupational mutagens, to understand mutational phenomena in these patients. She is now focused on advancing the analytical frameworks of mutational signatures further and also translating them into clinical applications.

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