

ANU Seminar

EVOLUTION, ECOLOGY, & GENETICS RESEARCH SCHOOL OF BIOLOGY

Thursday, 3 November 2011, 1pm



Single Molecule Real-Time
(SMRT) sequencing: Resolving
repetitive regions of the domestic
cat Y-Chromosome

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The unique genomic properties of the Y chromosome make it the most challenging region of the genome to sequence and assemble. Features such as large ampliconic tandem duplications with extremely high sequence identity (>99%), extensive tracts of repetitive DNA and high degrees of homology with the X chromosome have presented a barrier to the revelation of Y chromosome sequence using current technology. Only the human and chimp have had the euchromatic region of the Y chromosome sequenced. However, new advances in sequencing technology are poised to provide solutions to the previously insurmountable problems encountered with Y chromosome sequencing. The PacBio third generation sequencer detects the sequence of a single DNA molecule and, most importantly, provides unmatched read lengths of 2,000bp on average and up to 6,000bp maximum. Even with these breakthroughs in sequencing technology, the assembly of the Y chromosome will remain a significant bioinformatics challenge. This is why we have proposed a plan to help acquire relative positional information using a combination of large construct library sequencing and strobe sequencing.

For further info please contact:

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**Seminars are held in the Gould Wing Seminar Room, Building 116 Daley Rd, ANU
ALL STAFF AND STUDENTS ARE WELCOME TO ATTEND**