

Graduate Schools  
Infection & Immunity and Biology & Medicine

# Seminars in Microbiology

Monday, November 3, 2014

Room 7172, CMU

**11:30 – 12:30**

## Dr. David Horn

Professor at College of Life Science  
University of Dundee



# High-throughput decoding of drug-resistance and virulence mechanisms in African trypanosomes

Dr. David Horn works on African trypanosomes, which are parasitic protists causing sleeping sickness or Human African Trypanosomiasis (HAT) and the livestock disease, nagana. There are no vaccines, untreated sleeping sickness is typically fatal and current drugs display a range of undesirable features. His lab has recently identified >50 genes linked to drug action and resistance, including a gene encoding a water channel that explains arsenic-based drug-resistance in patients from Sudan and the DRC. Besides drug resistance, antigenic variation and genetic screens form two other topics studied in his lab. With regard to the latter one they developed an RNAi library screening method called RNA Interference Target sequencing or RIT-seq that opens up a whole range of opportunities in terms of decoding molecular mechanisms.

### Selected publications:

Mony et al. (2014) Nature. Genome wide dissection of the quorum sensing signaling pathway in *Trypanosoma brucei*.  
Alsford et al. (2012) Nature. High-throughput decoding of antitrypanosomal drug efficacy and resistance.  
Alsford et al. (2011) Genome Research. High throughput phenotyping using parallel sequencing of RNA interference targets in the African trypanosome.

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Sandwiches are offered after the seminar.