



## **YCCSA Seminar Series Spring 2020**

An interdisciplinary seminar series hosted by the York Cross-disciplinary Centre for Systems Analysis aimed at researchers from all disciplines

### **The gears of life: energy coupling at the molecular scale across the domains of life**

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Friday, 28 February 2020

CSE/102&103, Computer Science, 13:30

**Abstract:**

The biochemical systems that transduce energy have been studied for over 100 years. The mechanism of transduction is based on the interconversion of chemical and electrical energy. Only recently have the structures of the machines that catalyse these reactions been elucidated and it is now clear the stoichiometry of conversion varies from organism to organism, or is even tuned to particular growth modes. This stoichiometry, akin to mechanical gears, sets fundamental limits on the efficiency of transduction, and it is possible that some organisms will sacrifice efficiency for increased resilience in a changing environment. However, this is far from certain and requires theoretical and experimental investigation.

The seminar includes a refreshment break to fuel interdisciplinary discussion  
***Ron Cooke Hub is on Heslington East Campus – accessible by free bus services  
Nos. 66 and UB1 running at frequent intervals from Heslington West.***