You are invited to attend a seminar by Professor John Mattick, OA FAA

Professor of Molecular Biology and NHMRC Australia Fellow
Institute for Molecular Bioscience
The University of Queensland

Title
RNA rules

It appears that the genetic programming of humans and other complex organisms has been fundamentally misunderstood for the past 50 years, because of the assumption that most genetic information is transacted by proteins. Surprisingly, humans possess only about 20,000 protein-coding genes yet these protein-coding sequences account for less than 1.5% of the human genome. The extent of genomic non-protein-coding sequences increases with increasing complexity, reaching 98.8% in humans. This begs the question: what is the function of the remainder of the sequence and is this related to our complexity? The majority of these sequences are dynamically transcribed, mainly into non-protein-coding RNAs of which there are tens if not hundreds of thousands that show differential and cell-specific expression patterns and subcellular locations. Using bioinformatic and molecular approaches, emerging evidence from our laboratory indicates that these RNAs form massive interacting regulatory networks that direct the precise patterns of gene expression during growth and development, which has important implications in our understanding of human evolution, development, brain function and disease.

Event details
Date: Tuesday 5 April 2011
Time: 4 pm
Venue: Lecture Theatre
Building 207, Level 3, Room 2
RMIT Bundoora campus west
Clements Drive (off Plenty Road)
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