

# CABDyN / INET Oxford SEMINAR SERIES

## Oxford Martin School – Trinity 2014

For further information  
please contact the  
Cabdyn Administrator:

[info.cabdyn@sbs.ox.ac.uk](mailto:info.cabdyn@sbs.ox.ac.uk)

01865 288785

Seminar webpage:  
[www.cabdyn.ox.ac.uk/  
complexity\\_seminars.  
asp](http://www.cabdyn.ox.ac.uk/complexity_seminars.asp)

**Please note:** although  
the seminar  
programme detailed  
was correct at time of  
printing, seminar  
arrangements are  
subject to change – for  
the latest information,  
please check the  
seminar webpage.

### ‘High-frequency trading: what is it good for?’

Austin Gerig

Senior Research Fellow, CABDyN Complexity Centre,  
University of Oxford

**Tuesday 27<sup>th</sup> May 2014, 12.30 -14.00**  
**Seminar Room 1, Oxford Martin School**

#### ABSTRACT:

High-speed computerized trading, often called "high-frequency trading" (HFT), has increased dramatically in financial markets over the last decade. In the US and Europe, it now accounts for nearly one-half of all trades. Although evidence suggests that HFT contributes to the efficiency of markets, there are concerns it also adds to market instability, especially during times of stress. Currently, it is unclear how or why HFT produces these outcomes. In this paper, I use data from NASDAQ to show that HFT synchronizes prices in financial markets, making the values of related securities change contemporaneously. With a model (and drawing parallels with recent work in ecology), I demonstrate how price synchronization leads to increased efficiency: prices are more accurate and transaction costs are reduced. During times of stress, however, localized errors quickly propagate through the financial system if safeguards are not in place. In addition, there is potential for HFT to enforce incorrect relationships between securities, making prices more (or less) correlated than economic fundamentals warrant. This research highlights an important role that HFT plays in markets and helps answer several puzzling questions that previously seemed difficult to explain: why HFT is so prevalent, why HFT concentrates in certain securities and largely ignores others, and finally, how HFT can lower transaction costs yet still make profits.