



Eco**2 Symposium

8-10th September 2014

British Medical Association House, London, WC1H 9JP

Organisers: Drew Purves (Microsoft Research), Matthew Smith (Microsoft Research) and Jean-Pierre Zigrand (Systemic Risk Centre, LSE)

Programme day 1, Monday 8th September

12.00-13:00 Registration and lunch

13:00-13:05 Welcome

Plenary 1 - Fundamentals of ecology/ economics

13.05– 14:15 **Mike Begon**, Professor of Ecology at Liverpool University, lead author of the standard ecology undergraduate textbook 'Begon, Harper & Townsend'

Partha Dasgupta, Professor Emeritus of Economics at the University of Cambridge and author of 'A very Short Introduction to Economics'

Moderated by **George Sugihara**, McQuown Chair in Natural Science at the Scripps Institution of Oceanography, Theoretical Biologist, former advisor to the Bank of England, The Federal Reserve, and a former managing director of Deutsche Bank (George will also speak in a panel session)

Panel sessions (3 parallel sessions, 4 speakers each)

14:30—15:30 **Panel Session 1: Rationality and Decision Making** (learning, decision making under uncertainty, optimal foraging, ideal free distribution, bounded rationality, consumer choice, utility theory, decision making in organisms, life history theory)

Panel Session 2: Heterogeneity and Diversity (size and stability, diversity vs stability, beliefs, knowledge, asset price dynamics, scramble vs contest competition, size hierarchies, self-thinning, inequality, appetite for risk)

Panel Session 3: Stability and Robustness (endogenous risk, systemic risk, diversity vs stability, financial crises, interactions and markets, herding and contagion, redundancy, rescue effects)

Keynote speech

15:45– 16:45 **Keynote by Lord Robert May**, Professor at Oxford University and Imperial College London, ex President of the Royal Society and ex UK Chief Scientific Advisor to the UK Government -- on 'the collision of economics and ecology'.

16.45– 17:45 Coffee

Problem solving session (5 parallel sessions, 4 topics each)

17:45– 18:45 Details TBC

19:00-21:00 Reception and end of day 1



Programme day 2, Tuesday 9th September

Plenary 2: Important models in economics/ecology

08:45-09:45 **Thomas Lux**, Chair of Monetary Economics and International Finance at Christian-Albrechts-University in Kiel

Michel Loreau, Director of the Centre for Biodiversity Theory and Modelling at CNRS, France.

Moderated by **Lindsay Turnbull**, University of Oxford (Lindsay will also speak in a panel session)

Panel sessions (3 parallel sessions, 4 speakers each)

10:00-11:00 **Panel Session 4: Global Variation in Economies and Ecosystems** (macroecological laws / rules, global econometrics, development, institutions, trophic structures, trait distributions, GDP growth, clusters of economies, trade, biomes, top-down vs bottom up)

Panel Session 5: Tipping Points (early warning signals, non-linear responses, hysteresis, noise, alternate stable states, financial crises, ecosystem transitions, positive and negative feedback loops, social norms)

Panel Session 6: Networks (dynamic consequences of network structure, comparing networks, interactions and markets, trade and division of labour, social structure and power networks, underlying structure / logic of networks, trophic cascades)

11:00-12:00 Coffee

Problem solving (5 parallel sessions, 4 topics each)

12:00-13:00 Details TBC

13:00-14:00 Lunch



Day 2 continued

Panel sessions: (3 parallel sessions, 4 speakers each)

- 14:00– 15:00 **Panel Session 7: Resources and Supply Chains** (limiting resources, competitiveness, multiple resources, substitutability, resources and sustainability, global value chains, trophic structure, stoichiometry, R^* theory, pollution / bioaccumulation)
- Panel Session 8: Evolution** (adaptive dynamics, convergent evolution, role of history and contingency, coupled evol-ecol dynamics, co-evolution, complex evolutionary systems in behavioural finance, market selection and asset pricing, evolutionary finance)
- Panel Session 9: Randomness and Uncertainty** (forecasting markets, risk measurement, dynamics of stochastic models, neutrality, noise, chaos, data / models / decisions, uncertainty in structure vs parameters, what can we predict?)

Plenary 3: Application of ecological/ economic ideas

- 15:15-16:15 **Kathy Willis**, Director of the Biodiversity Institute (BIO) at the Department of Zoology at the University of Oxford and is also on secondment as Director of Science at Kew Gardens
- Thorsten Hens**, Director of the Department of Banking and Finance and Professor of Financial Economics at the University of Zurich
- Moderated by **Alan Kirman**, professor emeritus of Economics at the University of Aix-Marseille III and author and editor of twelve books, most recently 'Complex Economics: Individual and Collective Rationality' (Alan will also speak in a panel discussion)
- 16:15-16:35 Coffee

Keynote speech

- 16:35-17:35 **Keynote by Doyne Farmer**, Professor of Mathematics at Oxford University, where he co-directs the INET Oxford programme on Complexity; Topic TBC

Problem solving (5 parallel sessions, 4 topics each)

- 17:45-18:45 Details TBC
- 19:00- Social event and end of day 2



Programme day 3, Wednesday 10th September

Problem solving (5 parallel sessions, 4 topics each)

09:30-10:30 Details TBC

10:30-11:30 Interactive brunch

Panel sessions (3 parallel sessions, 4 speakers each)

11:30-12:30 **Panel Session 10: Movement, Migration; Dispersal, Demography** (dispersal, intelligent movement / dispersal, migration and urban dynamics, cities and transport, population and community dynamics, scaling of cities, modelling the human species, population growth, animal migration paths, connections among ecosystems, movement ecology)

Panel Session 11: Disturbance and Non-Equilibrium (ecological succession, metapopulation / metacommunity ecology, coexistence, extinction debt, post-glacial effects, evolution of market crises, efficient markets, bank runs, centralization vs decentralization, feedback loops)

Panel Session 12: Managing Complex Oecosystems (tax, regulation, monetarist vs Keynesian, laissez faire, exchange rates, Bank of England, conservation, biological control, reserve design, fisheries policy, species vs ecosystem approaches)

12:30-14:00 Reflections on Eco**2

End of conference