



Seminar

TROY DAY

Fellow, SCAS.

Professor of Mathematics, Statistics, and Biology,
Queen's University, Kingston, ON

What is Extended Heredity and the Extended Evolutionary Synthesis?

Tuesday, 11 December, 11:15 a.m.

In the Thunberg Lecture Hall
SCAS, Linneanum, Thunbergsvägen 2, Uppsala
www.swedishcollegium.se

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ABOUT TROY DAY

Troy Day is a Professor and Canada Research Chair (2002–2012) in the Department of Mathematics and Statistics and the Department of Biology at Queen's University. He has held visiting positions at the Centre national de la recherche scientifique in Montpellier, France; the Centre for Population Biology at Imperial College, United Kingdom, and the universities of Queensland and New South Wales in Australia. Day has served on the editorial boards of several journals and was an editor of *The American Naturalist* from 2012 to 2015. He is also a former North American Vice-President of the Society for the Study of Evolution and has served on a number of committees for the American Society of Naturalists and the Canadian Applied and Industrial Mathematics Society.

Day's research interests involve evolutionary theory, including the evolution of pathogen virulence, drug resistance, social traits, epigenetic inheritance, and sexual conflict/sexual selection. He is coauthor of three books: *Extended Heredity: A New Understanding of Inheritance and Evolution* (with Russell Bonduriansky); *Biocalculus: Calculus, Probability, and Statistics for the Life Sciences* (with James Stewart); and *A Biologist's Guide to Mathematical Modeling in Ecology and Evolution* (with Sarah P. Otto). Day is an Elected Fellow of the Royal Society of Canada and of the American Association for the Advancement of Science. He is also the recipient of a Killam Research Fellowship, an E.W.R. Steacie Fellowship, and the E.W.R. Steacie Prize.

While at SCAS, Day will work with Steve Chenoweth and Locke Rowe on a project integrating high-dimensional genomic data with the evolutionary theory of sexual conflict through the use of techniques from quantitative genetics and information theory.

ABSTRACT

In recent years it has become increasingly apparent that non-genetic forms of heredity exist in a wide variety of organisms. Furthermore, these “extended” forms of heredity can have interesting and important effects on how evolution by natural selection proceeds. Parallel to these findings has been the development of ideas from evo-devo, niche construction theory, and theory related to other “constructive” processes in evolution, with many of the researchers involved now calling for a revision or extension of the Modern Synthesis of Evolutionary Biology. In this talk I will give my own view of these issues by attempting to put all of the recent arguments within a common theoretical perspective.