UPPSALA
UNIVERSITET

CELSIUS–LINNAEUS
LECTURES 2014

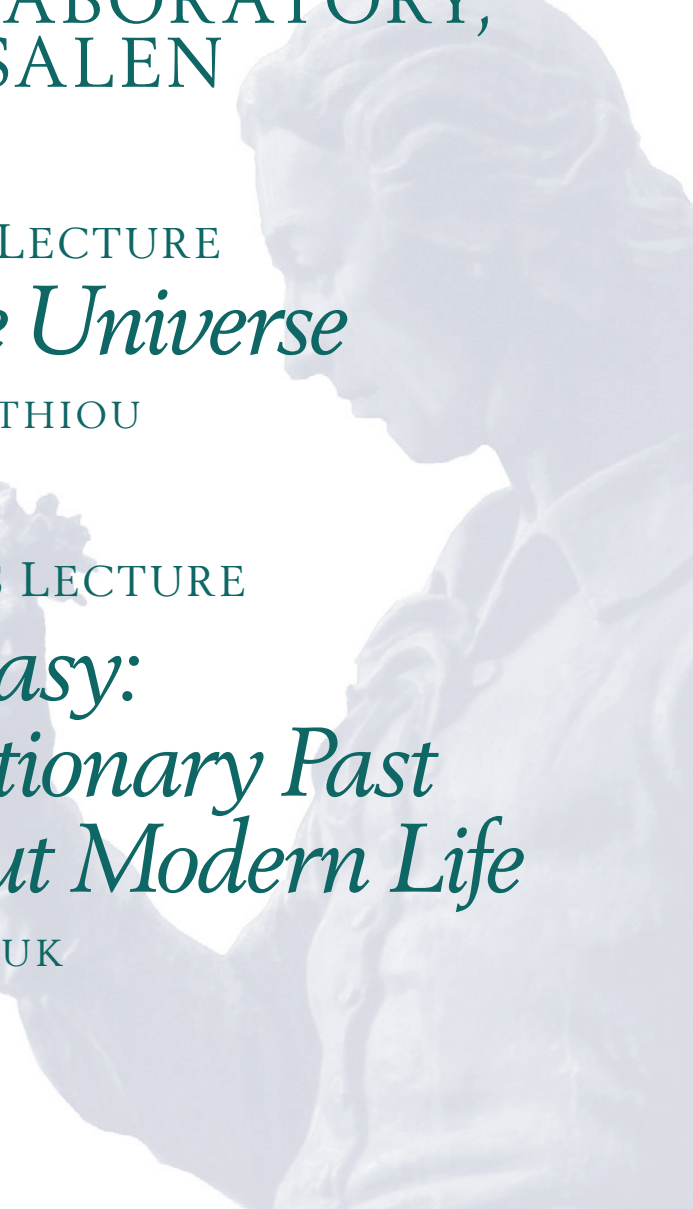
On Thursday 13 February,
the traditional Celsius-Linnaeus lectures will be held at

THE ÅNGSTRÖM LABORATORY, SIEGBAHNSALEN

14.00 – CELSIUS LECTURE

The Birth of the Universe

GEORGE EFSTATHIOU



15.30 – LINNAEUS LECTURE

Paleofantasy: What Our Evolutionary Past Really Tells Us About Modern Life

MARLENE ZUK

CELSIUS LECTURE
The Birth of the Universe

George Efstathiou
Professor of Astrophysics, University of Cambridge

Modern physics attempts to explain the full complexity of the physical world in terms of three principles: gravity, relativity and quantum mechanics. This raises important fundamental questions such as why is our Universe so large and old? Why is it almost, but not perfectly, homogeneous and isotropic? There will be a presentation of how recent measurements of the cosmic microwave background radiation made with the Planck Satellite can be used to answer these questions, and to elucidate what happened within 10^{-35} seconds of the creation of our Universe.

George Efstathiou is a Professor of Astrophysics at the University of Cambridge. He received his Ph.D. in Astronomy from Durham University in 1979. Professor Efstathiou has received several prizes for his research including the 1990 Maxwell Medal and Prize of the Institute of Physics, the 2005 American Institute of Physics Heineman Prize for Astronomy, and more recently the 2013 Nemitsas Prize in Physics. He was elected to the Royal Society in 1994. Professor Efstathiou has wide interests in theoretical and observational cosmology and has contributed to studies of large-scale structure in the Universe, galaxy formation, dark energy and the cosmic microwave background radiation. He is a member of the Science Team for the European Space Agency Planck Satellite, launched in May 2009, which is mapping the temperature and polarization anisotropies of the cosmic microwave background to unprecedented precision.

LINNAEUS LECTURE
Paleofantasy: What Our Evolutionary Past Really Tells Us About Modern Life

Marlene Zuk
Professor of Biology, University of Minnesota

We evolved to eat berries rather than bagels, to live in mud huts rather than condos, to sprint barefoot rather than play football – or did we? Are our bodies and brains truly at odds with modern life? Everyone is fond of paleofantasies, stories about how humans lived eons ago, and we use them to explain why many elements of our lives, from the food we eat to the way we raise our children, seem very distant from what nature intended. Many diets and self-help books are predicated on the notion that our behavior and bodies evolved under a certain set of circumstances, from which we deviate to our peril. Implicit in that idea is the assumption that humans in a modern society aren't evolving any more, that we have somehow freed ourselves from evolution, or at the very least, that evolution always requires so long to act that we can't expect to have adapted to our current circumstances. But popular theories about how our ancestors lived – and why we should emulate them – are often based on speculation, not scientific evidence, and they reflect a basic misunderstanding about how evolution works. There was never a time when everything about us – our bodies, our minds, and our behavior – was perfectly in synch with the environment. Evolution is continuous, and all organisms alive today, whether chimpanzees, modern day hunter-gatherers, or bacteria, are all equally evolved. What really matters is the rate of evolution, which is sometimes fast and sometimes slow. Instead of trying to live like cavemen, we need to understand that process.

Marlene Zuk is an evolutionary biologist. She is a Professor at the University of Minnesota, USA, in the department of Ecology, Evolution and Behavior, since 2012. Before this she served as Professor of Biology at the University of California, Riverside, from 1989. She earned her Ph.D. in 1986 at the University of Michigan, where she and W.D. Hamilton published the now-classic hypothesis that parasites influence sexual ornaments to be indicators of good genes. Her honors include being President of the International Society for Behavioral Ecology, fellow of the Animal Behavior Society, and receiving an honorary Doctorate from Uppsala University. She has written about evolution and sexual selection for the public in newspapers and several books, her latest being Paleofantasy: What Evolution Really Tells Us about Sex, Diet, and How We Live (2013).

The Celsius and Linnaeus Honorary Lectures are arranged annualy by the Faculty of Science and Technology in memory of Anders Celsius and Carl Linnaeus, world-renowned professors of Uppsala University.

Anders Celsius was appointed professor of Astronomy at Uppsala University in 1730 at the age of 28. He established the first professional astronomical observatory in Uppsala around 1740. His scientific activities included work on celestial mechanics, studies on comets and satellites, pioneering contributions to stellar photometry, to geodesy and to geophysics. He discovered that auroræ caused magnetic disturbances and he invented the temperature scale that bears his name. Anders Celsius died in 1744.

Carl Linnaeus was appointed professor of Medicine at Uppsala University in 1741 at the age of 34. Linnaeus had already in 1735 declared that the two most important tasks in natural history were "classification and naming" (divisio et denominatio). His Systema naturæ was published in 1735 at Leiden. Here we meet his permanent contribution to science, the naming practice, the binary nomenclature or binominal system. Linnaeus founded the Royal Academy of Sciences, now responsible for the Nobel Prize awards, and of which he became the first president. He died in 1778.