Travel the Scientific American Way!

Bright Horizons™

Are you curious about the evolution of "Evolution"?

Get the new angles on this important scientific discipline and topic of debate and policy. Journey with Scientific American into the Panama Canal whose engineering is the product of an historic struggle against Nature and skepticism. Sail with kindred spirits on SciAm's Evolution Emanation cruise-conference on Holland America's Zuiderdam round-trip Fort Lauderdale.

Find out the relationships between key pieces of logic, methods, and facts documenting evolution. See beyond the obvious into studies of the genetic code, the nuances of speciation and natural selection, and a meaning of immortality. Let yourself be absorbed in discussion of the impacts of cognitive psychology on philosophy, and of the emerging mathematics of the mind.

While you're in balmy tropical climes, why not kayak with a companion through crystal blue waters, stride through Curaçao's unique nature sanctuaries, and venture into Costa Rica's rainforests, surrounded by the sounds of wildlife and colors of flora and fauna. Prioritize your explorations, or just let them flow . . .

Sail with Scientific American and relax and refresh while gearing up to a refined understanding of the science of evolution, the challenges it faces, and the benefits it brings. Visit www.InSightCruises.com or call 650-787-5665 to get all the details, and then enrich mind and body with an intellectual adventure with the Scientific American community.

Cruise prices vary from $1,529 for a Better Inside to $5,199 for a Full Suite, per person. (Cruise pricing is subject to change. InSight Cruises will generally match the cruise pricing offered at the Holland America website at the time of booking.) For those attending the conference, there is a $1,275 fee. Taxes, gratuities, and a fuel surcharge are $405.

Listed is a sampling of the 20+ sessions you can participate in while we're at sea. For a full listing visit

www.InSightCruises.com/SciAm3-talks

The Evolution of the Genetic Code
Speaker: **Stephen J. Freeland, Ph.D.**

Why should all life use two utterly different chemical languages with which to construct itself? Why did it arrive at a single set of encoding rules for translating between them? How can the precise choice of coding rules influence life's struggle to stay one step ahead of extinction? You'll get the bottom line (as it stands now) on the origin and subsequent evolution of the genetic code from Dr. Freeland, including:

- the central dogma that unifies life
- the non-random "design" of genetic code words
- emergence from an RNA world
- the great unknowns

1859: The Impact of a Dangerous Idea
Speaker: **Jerry Coyne, Ph.D.**

In this session we'll trace the origin of Darwin's "dangerous idea" (actually several ideas) beginning with his famous voyage on the HMS Beagle. We will learn what Darwin really proposed, what impact the ideas of evolution and natural selection had on the Victorian world, and why Darwinism was — and still is — considered a dangerous idea.

Unconscious Design: Natural Selection
Speaker: **Jerry Coyne, Ph.D.**

While the idea of evolution was immediately accepted by 19th-century biologists, the concept of natural selection — the purposeless driving force of evolution and adaptation — has been much more controversial. This talk will describe what natural selection really is and see examples of how it works in nature. We will also examine the complementary theory of sexual selection, which explains the remarkable difference in appearance and behaviour between males and females in many species.

For details contact:
Neil Bauman • 650-787-5665
or neil@InSightCruises.com

On the Origin of Species, Really
Speaker: **Mohamed Noor, Ph.D.**

Although Darwin's book title suggested that he provided us with insights on the origin of species, in fact, he only focused on the process of divergence within species and assumed the same processes "eventually" led to something that could be called a new species. In this session, we'll talk about how species are identified (in practice and in principle), and then how modern evolutionary biologists use this type of information to get a handle on how species are formed.

From Magic to Muons: Why People Believe in Strange Things
Speaker: **Tania Lombrozo, Ph.D.**

Much of our knowledge is about things that we cannot see or touch. By studying human reasoning we can begin to understand both how people make scientific discoveries and how these processes can lead to some surprising errors in understanding our world. We'll consider the debate over evolution and intelligent design as a case study in people's understanding of and preference for different kinds of explanations for the world around us.

The Mathematics of Mind: Exploring the Formal Foundations of Human Thought
Speaker: **Thomas Griffiths, Ph.D.**

Over the last two millennia, scientists and philosophers have used approaches such as logic, artificial neural networks, and probability theory to develop scientific and mathematical models of thought. Dr. Griffiths will talk about current status of work to understand the formal principles that underlie human thought and our ability to solve the computational problems we face in everyday life.

Evolution of Individuality and Complexity Through Cooperation and Conflict
Speaker: **Richard Michod, Ph.D.**

Our understanding of life is being transformed by the realization that evolution occurs not only among individuals within populations, but also through the integration of groups of cooperating individuals into new higher-level individuals — that is, through evolutionary transitions in individuality (ETIs). The major landmarks in the diversification of life and the hierarchical organization of the living world are consequences of a series of ETIs: from genes to gene networks to the first cell; from prokaryotic to eukaryotic cells; from cells to multicellular organisms; from asexually reproducing individuals to sexually reproducing pairs; and from solitary individuals to societies. How do groups become new individuals? Cooperation and conflict play a major role in these evolutionary transitions. Join Dr. Michod and come away with a new perspective on the process of evolution and what it means to be an individual.

BRIGHT HORIZONS CO-PRODUCED BY:

SCIENTIFIC AMERICAN

InSight Cruises
EDUCATION THAT TAKES YOU PLACES

CST# 2065380-40