

SCIENTIFIC
AMERICAN™

Travel

BRIGHT HORIZONS™ 19

SOUTHEAST ASIA, FEB. 3RD – 17TH, 2014



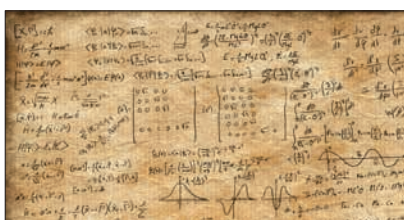
For information on more trips like this, please visit www.scientificamerican.com/travel

Look forward and backward, inward and outward on a science adventure in southeast Asia. Poised between vast continent and vast ocean, our cruise conference will explore the latest in science. Join Bright Horizons 19 in a landscape of fabled kingdoms, rich biodiversity, and poignant place names as we sail from Hong Kong to Singapore February 3–17, 2014 on Holland America Line's Volendam.

Realize the hope of seeing Angkor Wat, or of visiting Xi'an's Terracotta Warriors and Beijing's cultural treasures on Bright Horizon's custom optional pre-cruise explorations.

Gain the experts' insights into contemporary science while enjoying Southeast Asia's lush scenic beauty, legendary hospitality, tempting cuisine, and rich history. Connect with Bright Horizons' thoughtful community. Reserve now to join the fun. For full details, visit InsightCruises.com/SciAm-19 or call us at (650) 787-5665.

Cruise prices vary from \$1,799 for an Interior State-room to \$7,099 for a Neptune Suite, per person. For those attending our SEMINARS, there is a \$1,575 fee. Port Charges are \$299 per person; gratuities are \$11.50 per person per day; taxes and fees are \$100 per person. The Program, cruise pricing, and options are subject to change. For more info please call 650-787-5665 or email us at conciierge@insightcruises.com.



THEORETICAL PHYSICS

Speaker: Sean Carroll, Ph.D.

The Hunt for the Higgs Boson

For decades, particle physicists have searched for the elusive Higgs boson, the missing piece of the "Standard Model" that explains the world we see. Last year, scientists at the Large Hadron Collider announced that they'd found it. Learn why the Higgs boson is so important, and what the future of particle physics might hold.

Our Preposterous Universe

In the last century scientists learned that the universe is over 10 billion years old, that it is expanding, and that ordinary stars, planets, and people represent less than five percent of the universe. We'll discuss the rest, which is in the form of mysterious substances called "dark matter" and "dark energy."

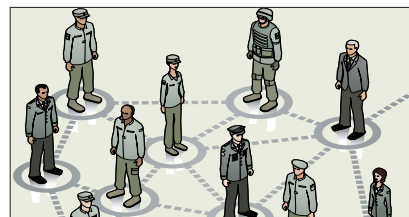
The Arrow of Time

We can turn an egg into an omelet, but not an omelet into an egg. That's the arrow of time, which can be explained by assuming that the universe has been increasing in disorder since it began. We'll discuss the nature of time, the origin of entropy, and what happened before the Big Bang.



The Many Worlds of Quantum Mechanics

Despite the success of quantum mechanics, most physicists would agree that we still don't understand what it means. Learn about the source of this puzzlement, and why an increasing number of scientists think the world we experience is constantly branching into different versions, representing the many possible outcomes of quantum measurements.



MILITARY STRATEGY

Speaker: Andrew Wilson, Ph.D.

The Classics of Strategic Thought

We'll study great strategic theorists — Thucydides, Sun Tzu, Mao, Machiavelli — to evaluate the political purposes of war, the balancing of political and military considerations, the varied types of wars and means of waging war, and the difficulties in bringing war to an end and establishing peace.

The Chinese Way of War?

The Chinese have been thinking about war for thousands of years, leading some to suggest they possess a unique and superior approach to strategy, diplomacy and warfare. By taking a skeptic's view of common assumptions, we demolish the myths and better understand the actual strategic inclinations of Chinese states, past and present.

China's Relations with Southeast Asia

The history of Southeast Asia is inextricable from the ebb and flow of Chinese power. We'll place Chinese-Southeast Asian relations in historical context, examine the most intense resource and territorial frictions today, and look forward to likely approaches Beijing might take in the region, and the probable reactions.

For more info please call 650-787-5665 or visit scientificamerican.com/travel

The Voyages of Zheng He

Our voyage cruises the same waters as the epic journeys of Zheng He, who led seven 15th century trips into the South China Sea and Indian Ocean. Learn why the Ming Dynasty went to sea, and what their interactions with foreign powers reveal about how the Ming saw their place in the world.



ARCHAEOLOGY

Speaker: John R. Hale, Ph.D.

A Land of Natural Wonders

Learn about the spectacular natural wonders of Southeast Asia, from ancient rainforests to stunning coral reefs. We'll cover the wealth of unique plant and animal species native to this region, as well as the history of the first domestication of rice, chicken and pigs here. It's a trove of geology, biology, and natural history.

Cradle of Human Evolution

Find out why Southeast Asia is at the forefront of evolutionary research, and why 19th century scientists believed the human species originated here. We'll cover some of the most game-changing fossils found in the region, from "Java Man" to "Peking Man" to Gigantopithecus and "Flores Man."

Land of Lost Kingdoms

Fascinating kingdoms, from the Khmer rulers who built Angkor Wat to the Siamese kings who defied European colonialists, once reigned in Southeast Asia. Though always living under the threat of Chinese takeover, these powers nonetheless created unique cultures and artistic traditions. We'll discuss this rich history and the monuments they left behind.

Faiths in Collision

Learn how three of the world's major religions — Hinduism, Buddhism and Islam — gained firm footholds in Southeast Asia, eventually overcoming the region's native animistic religious cults. We'll discuss the remarkable architecture — temples, monasteries, mosques — of these religions, as well as the ways their beliefs continue to permeate everyday life.

The Story of the Spice Trade

The spices of Southeast Asia — pepper, cinnamon, cloves, nutmeg, cardamom, and others — led Europeans to forge sea-routes seeking out these treasures, and even motivated Columbus' search for a shortcut to Asia (which led him to stumble on America). Learn how the global trade that we take for granted today had its origins in the spice trade.

Shipwrecks of Southeast Asia

Beneath the seas of Southeast Asia lies a museum of Arab dhows, Chinese junks, European trading ships, and World War II warships that were lured by commerce or war. Learn how ancient coins, woodcarvings, bronzes, and the wooden hulls of ships themselves helped archaeologists reconstruct the trade routes that linked East and West.



HISTORIC INTERPRETATION

Speaker: Mark A. Stoler, Ph.D.

Myths and Realities in the Study of History

History isn't the rote memorization of facts, nor an objective study concerned only with the past. Rather, it is a complex and subjective study of the relationship between past events that tells us about the present. We'll look at a few controversial episodes in American history to understand the process of historical study.

Vietnam: America's Most Controversial War

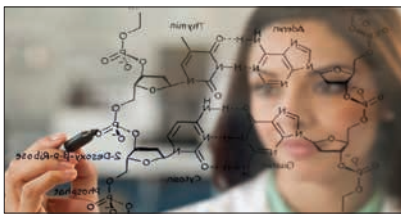
The Vietnam War was one of the most controversial conflicts in U.S. history, and it continues to divide us. We'll explore the myths and historical realities of the Vietnam war, focusing on when and why the United States became involved, why we were unsuccessful, and why the experience still haunts us.

Myths and Realities in WWII

Many of Americans' beliefs about the causes, consequences and lessons of WWII are viewed by scholars as ethnocentric myths that ignore the contributions and perspectives of other peoples. We'll compare standard perceptions with historians' perspectives, and get an alternative vision of American participation.

George C. Marshall

Explore the life of one of the most important, yet relatively unknown, figures in 20th-century American history.



GENETICS & EVOLUTION

Speaker: John Mattick, Ph.D.

The Story of the Molecular Biology Revolution

Learn of the heady days when enzyme chemists joined physicists to decipher the genetic code, and later joined bacterial geneticists to develop the tools that launched the genomic revolutions that are laying bare the programming of life. It's a story of great characters, rivalries and debates, vision and hubris.

The Origin of Life

The story of life is a dramatic, mysterious tale, originating in a primordial soup of organic molecules, and ultimately resulting in species that can remember, learn, sing, think and write. Learn how evolution navigated cellular biology, and probe the complex innovations that must have occurred along the way.

Junk DNA: Challenging the Dogma

Non-coding sequences of DNA were dismissed as junk when discovered, but scientists now realize that these segments are copied into RNA in precise patterns that orchestrate gene expression during development. Learn how "junk" actually holds the secret to understanding human evolution, development, diversity and cognition.

Evolving Evolution

We'll contrast two early views of evolution by Charles Darwin and Jean-Baptiste Lamarck, and discuss how the understanding of evolution has itself evolved. The traditional picture, that mutation is random and selection acts only on progeny, may be incorrect. Evolution has learned how to learn, and we're the result.

Your Genome and You

Gene sequencing, once a costly and difficult process, is set to become routine in the near future. Medicine is evolving from the art of crisis management to the science of good health, increasingly tailored to individuals' genetic and environmental circumstances. Learn what we stand to gain, and what surprises may be in store.



NATURAL HISTORY

Speaker: Craig Benjamin, Ph.D.

Understand the universe, our planet, and the history of humankind in a whole new way by taking a broader view and focusing on the big picture. Big History, which emerged as a discipline in the 1980s, considers the whole of the past on the largest possible timescale. It begins with the origins of the universe, and goes on to consider the modern scientific accounts of the origins of stars and planets, of life on Earth, the emergence of human beings, and the human societies that have existed up to the present day. Ultimately Big History encourages us to consider our own particular place and time in the globalized world, and to think of how we might contribute to the future of that world.

Session One: What Is Big History and Why Does It Matter?

Introduction to the exciting interdisciplinary world of the Big Historian.

Session Two: The Big History of the Universe, Stars, Planet Earth, and Life

The cosmological, geological, and biological environment in which human history has unfolded.

Session Three: The Big History of Humanity

The key revolutionary changes in human history, from 200,000 years ago to around the year 1800.

Session Four: The Big History of the Present and Future

The modern revolution, the present, and the near and distant future.