

January 27 – February 3, 2008
Bright Horizons



GUIDE TO PROGRAM & EVENTS

| DATE | PORT | ARRIVE | DEPART |
|-----------------|------------------------------------|---------|--------|
| Sun., Jan. 27 | Tampa, FL | | 5pm |
| Mon., Jan. 28 | Key West, FL | 11:30am | 6pm |
| Tues., Jan. 29 | At Sea | — | — |
| Wed., Jan. 30 | Belize City, Belize | 7am | 5pm |
| Thurs., Jan. 31 | Santo Tomas De Castillo, Guatemala | 7am | 6pm |
| Fri., Feb. 1 | Cozumel, Mexico | Noon | 9pm |
| Sat., Feb. 2 | At Sea | — | — |
| Sun., Feb. 3 | Tampa, FL | 8am | |

BRIGHT HORIZONS PROGRAM

27th of January — Sunday

5pm **Ship Departs from Tampa**

7pm – 7:45pm **Bon Voyage Cocktail Party**
[Crow's Nest]

28th of January — Monday

11:30am **Ship Arrives Key West**

6pm **Ship Departs from Key West**

8:30am – 10am **How The Science Sausage Gets Made**
Steve Mirsky, M.Sc. — [Wajang Movie Theater]

What is it like to be a science journalist? Steve Mirsky has been a science writer for two decades, the last 11 years at Scientific American. He'll talk about the process by which science gets turned into articles for a general audience, along with some of the more amazing moments that have occurred during that process (like the editor who confused Caesar the Roman with Caesar the salad). He'll also share some of the interactions that occur between writers and readers at Scientific American, some of whom apparently keep a database of every aspect of the magazine, right down to the photo credits. And we'll talk about how some science fiction winds up appearing in Scientific American.

8:30am – 10am **The Once and Future Web**
Bebo White — [Half Moon Room]

Although the technology has only been around for slightly more than a decade, it is difficult to imagine computing without the World Wide Web. Beneath the simplicity that we see in our browsers, the underlying machinery of the Web has changed a great deal. How will the Web evolve in the next ten years and what will be the technological and social forces that drive its changes? Are "Web 2.0" and the "Semantic Web" just hype or genuine indicators of the direction in which the Web is moving? What will the "future Web" look like and how will it be used? This lecture will examine some of the clues of what we might expect in the "future Web" and how we can prepare for the changes to come.

6pm – 7:30pm **The Evolution of Evolution, and Your Fossil Potential**
Steve Mirsky, M.Sc. — [Wajang Movie Theater]

Today's evolution is not your grandfather's evolution. Molecular biology and genetics, crucial to our current understanding of evolution, didn't even exist as scientific disciplines during Charles Darwin's life. In fact, Darwin's evolution was not even his grandfather's evolution—Erasmus Darwin penned a preliminary tract on evolution. We'll look at how Darwin's basic theory of variation and natural selection as a mechanism for evolution has been modified and augmented as scientists have added 150 years of research to Darwin's foundation.

And if you've ever considered donating your body to science, medical schools have been the usual recipient. But here's an unusual opportunity—we'll look at how to maximize your potential for ending up in a museum some day in the far future as a significant fossil find. And being buried in a box in the ground is one of the worst plans possible. The field of taphonomy studies the physical processes by which fossils come to exist, and offers the best insights into your personal program for one day being encased in a museum of natural history.

29th of January — Tuesday (Sea Day)

8:30am – Noon **Heartbreak in a Hundred Languages: How We Conceive of Abstract Concepts Through Our Bodies**
Alice Gaby, Ph.D. — [Half Moon]

As Foreigner once sang: "I want to know what love is, I want you to show me". But how can we understand an abstract concept like love, or explain it to another person? This question applies equally to other concepts like truth, black holes, and time. The fact that we cannot reach out and touch them doesn't prevent us from talking about them. In fact, "time" is the most commonly used noun in the English language! But in order to talk about — and even think about — concepts, we link them metaphorically to more familiar objects. Most commonly, we start from the most familiar object of all: our bodies. Although the mapping of the abstract onto the more concrete and familiar is pretty much universal across languages and cultures, the particular links and analogies drawn can vary wildly. In this seminar, we'll explore how people around the world conceptualize and describe emotions, spatial relationships, time, and other concepts in terms of the body. Dr. Gaby will also discuss the broader power of metaphor in constructing our beliefs and understanding of the world around us, allowing us to grasp the intangible.

9am – 11am **Global Warming and the Energy Transition**
John Rennie — [Wajang]

Rising global temperatures and worries about the world's current dependence on fossil fuels will push civilization to make wider use of renewable energy, conservation, established technologies such as nuclear and new ones such as fuel cells. John Rennie will review future energy options and also consider how radical "geo-engineering" projects for reshaping the environment might be deployed if climate change prevention is not enough.

10:30am – Noon **Sacred Ballgames of Mesoamerica: Iconography & Ballcourt Architecture**
Nicholas Hellmuth, Ph.D. — [Piano Bar]

The ritual ballgames of the Maya and neighboring civilizations are the stuff of legend and of a steadily increasing body of fact. Dr. Hellmuth, who has played the Maya ballgame himself (slightly modified rules!), will sort through the archaeology, architecture, evolving sociological and political theories of the game, and of course, the conduct and process of play.

Noon – 1pm LUNCH

1pm – 2:30pm **Sacred Plants of the 6th–9th Century Maya of Mexico, Belize, Guatemala, and Honduras**
Nicholas Hellmuth, Ph.D. — [Piano Bar]

Plants were not only a central component of the Classic Mayas' physical environment, they richly populated and functioned in the Maya cosmos, and were highly significant in culture and ritual. To deepen your knowledge of the roles of sacred plants such as maize, cacao, flor de Mayo, hule (a rubber tree), the water lily, and a host of other sacred plants and flowers, Dr. Hellmuth will discuss the importance of the Mayas' sacred plants, their uses, and distribution in the Maya world.

You'll gain a sense of the interrelationship of Maya cosmology, botany, culture, agriculture, and history represented in the concept of sacred plants. We'll get a glimpse of Dr. Hellmuth's extensive collection of images showing both living specimens of plants and plant products, and the botanical motifs related to Maya sacred plants in architecture, murals, and pottery.

1pm – 2:30pm **Composition of the Universe**
Thomas Abel, Ph.D. — [Half Moon]

Of what is the Universe made? How do we know this? Is it really true that 96% of the energy in the Universe is of unknown form? How can we be so sure? Can we still understand the origin of stars and galaxies if we only know the nature of 4% of the universe?

2:45pm – 4:15pm **Computational Science and Engineering**
Bebo White — [Piano Bar]

Wikipedia defines computational science (not computer science) as "the field of study concerned with constructing mathematical models and numerical solution techniques and using computers to analyze and solve scientific and engineering problems." What this definition fails to express is how computational science has become an integral component of all scientific disciplines and how it promises to fundamentally change the way in which science will be done in the future. The impact of computational science can only be likened to how the execution of scientific research was changed by the elaboration of the Scientific Method. This lecture will describe the elements of computational science and engineering and research methods that take advantage of these elements. Case studies will be presented to illustrate applications of these methods.

2:45pm – 4:15pm **Pyramid Temples & Palaces: Architectural History of the Pre-Columbian Maya**
Nicholas Hellmuth, Ph.D. — [Half Moon]

Think of the Maya, and one of the first images that comes to mind is a pyramidal temple. Approaching the monumental architecture of the Maya can be done from the viewpoint of several disciplines. Dr. Hellmuth brings his learned work in architecture, archaeology, and anthropology, along with his expertise as a photographer and archivist, to this survey of Maya ritual and palace structures. He will illustrate his comments with a choice selection from his collection of more than 8,000 images from Maya sites and he has promised to not show all 8,000.

4:30pm – 7:30pm **Living Ethically in the Brave New World**
John Rennie — [Wajang]

As technologies once known only through science fiction become part of our daily lives, all of us will increasingly be faced with troubling new ethical problems. Is it right for a grieving parent to try to clone a lost child? Should the wealthy be able to buy transplantable organs if poor people are willing to donate them? If an intelligent machine begs you not to turn it off, should you? Should genetics and neuroscience affect legal definitions of guilt and innocence? John Rennie will lead a Socratic discussion with the class that explores these complex topics.

6pm – 7:30pm **Tomb of the Jade Jaguar: What it was like to be a Harvard student and excavating the tomb of the Ninth Century King of Tikal**
Nicholas Hellmuth, Ph.D. — [Half Moon]

It's Indiana Jones time. Dr. Hellmuth presents his experience and his "beginners' luck" in discovering one of the most richly stocked royal burials of the entire ancient Maya realm.

The Tomb of the Jade Jaguar at Tikal included the largest pyrite mosaic mirror yet found in all of Mesoamerica, the greatest number of pottery vessels of any Late Classic Maya burial known in the lowlands, and more jade jewelry than any tomb other than that of Palenque or in Temple I of Tikal.

Dr. Hellmuth will explain the scientific approach to such a find, as well as providing "color commentary" — a month of painstaking excavation to tunnel deep into the pyramid; documentation of progress; ten days of analysis of how best to tackle recording the over-filled tomb chamber and its royal mortuary offerings; and of course, life in the jungle.

Savor the rare opportunity to hear about the discovery of a great king's burial chamber directly from the discoverer!

30th of January — Wednesday

7am **Ship Arrives Belize**

5pm **Ship Departs from Belize**

6pm – 7:30pm **Computing the Universe**
Thomas Abel, Ph.D. — [Wajang]

We ask: How can we numerically solve the equations of fluid dynamics? Reactive flows? Radiation transport? Stellar winds and explosions? Consider the vastness of the scales: The sun is already about a trillion times smaller than the Galaxy! Recently, we have learned to model enormous numbers of bodies and their gravitational effects on each other. We'll discuss the physics that shape the Universe and how we now solve physical equations on modern supercomputers.

6pm – 7:30pm **Underwaterworld Iconography of the Classic Maya**
Nicholas Hellmuth, Ph.D. — [Half Moon]

The Maya underworld was an underwater world. Dr. Hellmuth will guide us through the mythology and iconography of the Maya underwaterworld. Using a multi-disciplinary

approach and a scientist's keen eye for tropical flora and fauna, Dr. Hellmuth will decipher the design motifs of the supernatural plants, animals, and creatures that signal underwater-world-related aspects of the Maya cosmos and belief systems.

You'll acquire an enhanced baseline understanding of the symbolism of the sacred shark and waterlily and other flora and fauna; the abstracted or abbreviated representations of these things in Maya art, and the status of scientific efforts to document and preserve the corresponding living plants and animals that are associated with the Maya cosmos.

31st of January — Thursday

7am **Ship Arrives Santo Tomas De Castillo**

6pm **Ship Departs from Santo Tomas De Castillo**

6pm – 7:30pm **The First Things in the Universe and their Aftermath**
Thomas Abel, Ph.D. — [Wajang]

Ab initio simulations tell us what the first things in the universe were in unique detail. The first things are actually very massive isolated stars, which have had an enormous impact on everything that has come since then. These first stars evaporated their parent clouds, expelled the first heavy elements, and seeded the universe with the potential for life. The formation and evolution of galaxies are now being understood—one star at a time.

6pm – 7:30pm **Transformed Social Interaction in Virtual Worlds**
Jeremy Bailenson, Ph.D. — [Piano Bar]

Over time, our mode of remote communication has evolved from written letters to telephones, email, internet chat rooms, and videoconferences. Collaborative virtual environments (CVEs) and other forms of digital communication promise to substantially evolve the nature of remote interaction. CVEs track verbal and nonverbal signals of multiple participants and incorporate those signals into avatars, a person's three-dimensional digital representation in a shared digital space. Unlike in telephone conversations and videoconferences, interactants in CVEs can systematically filter the physical appearance and behavior of their avatars, amplifying or suppressing features and nonverbal signals in real-time for strategic purposes. Join Dr. B as he updates Grandma's advice to "never judge a book by its cover" and discusses:

- Do CVEs qualitatively change the nature of remote communication?
- What impact does their avatar have on participant's persuasive and instructional abilities?

1st of February — Friday

Noon **Ship Arrives Cozumel**

9pm **Ship Departs from Cozumel**

8:30am – 10am **The Evolution of Antievolution**
Steve Mirsky, M.Sc. — [Wajang]

Evolution has been a subject of waxing and waning controversy since the day that Darwin published *The Origin of Species*. We'll look at some of the history of the antievolution movement, with special attention to the "creationist science" and "intelligent design" efforts of the last three decades. One of the seminal events in this period — perhaps the biggest evolution trial since Scopes — was the 2005 Kitzmiller lawsuit in Dover, PA, brought by parents against an "intelligent-design" friendly school board. Steve Mirsky attended opening arguments and some of the testimony of the month-long Dover trial and will discuss the case background, the events in the courtroom and the groundbreaking decision rendered by Judge Jones. We'll also spend some time on the Cobb County, GA, textbook sticker antievolution case, and share mail from some Scientific American readers still unconvinced about the scientific validity of evolution.

8:30am – 10am **Buying and Selling 1's and 0's: How VR Changes Marketing**
Jeremy Bailenson, Ph.D. — [Half Moon]

Life is becoming digital, with many of us spending large amounts of time and resources online. Virtual worlds are not just points of purchase — they are becoming personalized social spaces which provide entertainment, commerce, well-being, and even a source of personal identity. Dr. Bailenson will highlight the ways in which researchers and consumers are currently using virtual worlds, discuss results from psychological experiments that highlight the similarities and differences between online and face-to-face behavior, and examine the unique opportunities the virtual world provides market researchers.

10:30am – Noon **Battlegrounds and Roads Forward for Emerging Technologies**
John Rennie — [Wajang]

Nanotechnology, synthetic biology, artificial intelligence, new energy systems, and a host of other radical technologies could transform the world as we know it over the next few decades. How they might do so and whether they will get the chance, however, depend strongly on how society copes with some of the dramatic conflicts those technologies will raise on issues such as personal privacy, security and preservation of the environment. John Rennie will explain these new technologies, strip the fiction from the facts about their capabilities and dangers, and discuss how best to prepare for them.

10:30am – Noon **Ethno-botany: Plants Utilized by the Maya from Classic Times Through Today**
Nicholas Hellmuth, Ph.D. — [Half Moon]

We know that plants served an extensive role in the Mayas' relationship with their deities. Back in the earthly Maya realm, what's for supper?

Across the diverse terrain of the Maya world, a wide variety plants served the nutritional needs of the people. From the familiar cacao and vanilla to the odd-looking, night-blooming pitaya, Dr. Hellmuth will orient you to the interesting and exotic fruits and vegetables used by the Maya from pre-Columbian times through today.

2nd of February — Saturday (Sea Day)

8:30am – 10am **What's So Funny About Science**
Steve Mirsky, M.Sc. — [Wajang]

Human beings are funny, science is an activity performed by human beings, therefore science is funny. Or sometimes can be. For the last 11 years, Steve Mirsky has written an allegedly humorous column for Scientific American called Anti Gravity (it's lighter than the gravitas of the rest of the magazine). We'll talk about fun science, funny science, and science that is covered in a funny way; and why even funny science can illustrate important points about the scientific method and the philosophy of science. Highlights include: the man in the moose suit; the bald turkey researcher (the turkeys are bald, not the researcher); an analysis of life histories of invading species in science fiction movies; the dangers of being scientifically illiterate (mixing up the oxytocin with the oxycontin); and more!

8:30am – 10am **Virtual Bodies and the Human Identity: The Proteus Effect**
Jeremy Bailenson, Ph.D. — [Half Moon]

Cyberspace grants us great control over our self-representations. At the click of a button, we can alter our gender, age, attractiveness, and skin tone. In a series of studies, Dr. Bailenson and colleagues have explored how putting people in avatars of different physical features such as age, race, and gender affect how they behave not only in a virtual environment but in subsequent physical interactions as well. Inquiring minds want to know — as we choose our avatars online, do our avatars change us in turn?

10:30am – Noon **The Big Bang Theory and its Successes**
Thomas Abel, Ph.D. — [Half Moon]

We've come a long way in our understanding of the formation and nature of the Universe. Less than 80 years ago, Edwin Hubble showed that the Universe is expanding. Sixty years ago, we learned where all the hydrogen and most of the helium in the Universe were made. About 40 years ago, we started observing the radiation left over from the beginning of the universe. The photons in this background travel 13.7 billion years unimpeded until they are absorbed in our detectors. Over the last 20 years, we've come to understand that without dark matter, there would be no galaxies nor any of us. What will we know in 2029 on the 100th anniversary of Hubble's discovery?

10:30am – Noon **Homuncular Flexibility: Adapting Physical Brain Structure to Virtual Bodies**
Jeremy Bailenson, Ph.D. — [Piano Bar]

Rather than debating "you can't teach an old dog new tricks" Jeremy Bailenson will explore "can you teach an old dog to re-conceptualize and accordingly execute old tricks?" We'll examine studies about a concept first developed by Jaron Lanier called "homuncular flexibility" — learning to re-map physical degrees of freedom onto digital representations in interactive tasks. The essential question is: Can people learn to re-map degrees of freedom that are not essential to a task in order to control novel digital actions which are relevant to a task? For example, if the task were using a single hand to paint a wall, could a person learn to use one physical hand to *control the position* of five (or so) virtual hands at once?

Noon – 1pm LUNCH

1pm – 4pm **An Introduction to High Performance and Grid Computing**
Bebo White — [Piano Bar]

When the term "High Performance Computing (HPC)" is used these days it is more often than not referring to large "farms" or arrays of small, low-cost computers working together to accomplish a compute-intensive problem rather than to so-called supercomputers. These "farms" may contain thousands of individual CPUs but give the illusion of a single computing entity. Such "farms" provide high throughput, are scaleable, use inexpensive components and open-source software, and are fault tolerant. Similar to concept to these "compute farms" are "computing grids" where networks (usually the Internet) provide the "glue" thereby creating "a virtual computer architecture." "Computing grids" offer the promise of computing as a "utility" where anyone on the network has access to all the computing resources they want or need.

1pm – 4pm **Does The Language You Speak Shape The Way You See The World?**
Alice Gaby, Ph.D. — [Half Moon]

Does a French speaker think of a bridge as manly just because the French word (for bridge) "pont" is gender masculine? It might sound far-fetched, but this is exactly what some recent experiments show. The question of whether speaking different languages leads to different cognitive processes has inspired some of the most exciting recent psycho-linguistic research. In this seminar, Dr. Alice Gaby will argue that you see what you're saying; that the language you speak will not only affect the way you think about the world but even how you perceive it! We will explore how speakers of languages from all over the globe perceive and label color, reckon spatial relationships, and conceptualize time. By the end, you'll be wondering just how differently you might see the world if you pick up a little Q'eqchi' during our stop in Santo Tomás de Castilla.

4:30pm – 7:30pm **Free Will, Genetics, and Neuroscience**
John Rennie — [Wajang]

Notions of free will influence not only our sense of ourselves as individuals but also social institutions like the law. As genetics and neuroscience trace the roots of our behaviors in more detail, however, it becomes harder to see human beings as completely free. How will further advances in science change our views of personal responsibility and legal guilt? After reviewing highlights in the current state of knowledge about human behavior and consciousness, John Rennie will prompt the class to discuss the significance of these findings to the real world.

3rd of February — Sunday

8am **Ship Arrives Tampa**

SPEAKER PROFILES

Thomas Abel, Ph.D. of the Kavli Institute for Particle Astrophysics and Cosmology is a man with a mission: “My long term goal is to build a galaxy, one star at a time” (via computer modeling, of course). Among Abel’s research interests are the processes and events of “the dark ages”, the first few hundred million years after the Big Bang.

Abel and colleagues’ visualizations and simulations of dark ages events, in addition to publication in the technical literature, have been featured on PBS and The Discovery Channel and in numerous newspapers and magazines, including the covers of *Discover* in December 2002 and of *National Geographic* in February 2003.

Dr. Abel studied at the Max Planck Institut fuer Astrophysik prior to earning a Ph.D. in physics in 2000 from Ludwig-Maximilians-Universität, Munich, Germany. Abel was a post-doctoral fellow at the Institute of Astronomy at Cambridge, England and at the Harvard Smithsonian Center for Astrophysics in Cambridge, Massachusetts. He was a Wempe Lecturer at the Astrophysikalisches Institut Potsdam, Potsdam, Germany, in 2001, and merited a CAREER Award from the National Science Foundation, Arlington, Virginia, 2002. Dr. Abel served as an Assistant and then Associate Professor for 2.5 years at The Pennsylvania State University in the Department of Astronomy and Astrophysics. He is now an Associate Professor of Physics in the Kavli Institute for Particle Astrophysics and Cosmology at both the Stanford University Physics Department and the Stanford Linear Accelerator Center, Stanford and Menlo Park, California.

Current research interests of Dr. Abel include: the first structures in the universe; reionization and radiative transfer in cosmology; quasar absorption line systems; magnetohydrodynamics in the early universe; formation of molecular clouds, halo globular clusters and supermassive black holes; chemistry of the early universe; and the first stars.

Dr. Jeremy Bailenson’s main area of interest is the phenomenon of digital human representation, especially in the context of immersive virtual reality. He explores the manner in which people are able to represent themselves when the physical constraints of biological behaviors are removed. With funding from the National Science Foundation, Stanford University, and Silicon Valley and international corporations he designs and studies collaborative virtual reality systems that allow physically remote individuals to meet in virtual space, and explores the manner in which these systems change the nature of verbal and nonverbal interaction.

Dr. Bailenson earned a B.A. cum laude from the University of Michigan in 1994 and a Ph.D. in cognitive psychology from Northwestern University in 1999. After receiving his doctorate, he spent four years at the Research Center for Virtual Environments and Behavior at the University of California, Santa Barbara as a Post-Doctoral Fellow and then an Assistant Research Professor. He currently is Director of Stanford’s Virtual Human Interaction Lab.

Bailenson’s work has been published in academic journals, including *Cognitive Psychology*, *Discourse Processes*, *Human Communication Research*, *Psychological Science*, and *PRESENCE: Teleoperators and Virtual Environments* and numerous book chapters. He is a frequent interview subject in the scientific and business media, and can contrast colleagues’ definitions of virtual reality as “A consensual hallucination” and “a new post-symbolic paradigm which circumvents representation with a direct experience” on the fly.

Bailenson did not originally anticipate a career involving contemplating life with five virtual arms. Noteworthy to his potential dining companions, in the course of his Ph.D. work at Northwestern, he developed a mathematical model of persuasive argumentation, studied cultural differences in reasoning and categorization, and taught a course on “Human Reasoning and Argument Strategies”.

Alice Gaby, Ph.D. has spent most of her life investigating how people are able to talk and think about complex things, with the hope that she might one day be able to do so herself. An expert in the aboriginal languages of Australia, Dr. Gaby is primarily interested in the complex interrelationships between language, culture, and cognition. Her research examines the cognitive consequences of the particular structures of individual languages. That is to say, that if you get in the habit of talking about something in a particular way, you’ll probably start thinking about it in that way too. Dr. Gaby is particularly well-placed to conduct such research given her extensive first-hand experience of habits, both good and bad.

After dozens of flights between Melbourne (Australia), Nijmegen (Netherlands), and the aboriginal community of Pormpuraaw, Dr. Gaby earned a Ph.D. from the University of Melbourne and the Max Planck Institute for Psycholinguistics. Armed with her doctoral dissertation on the grammar of the Australian language Kuuk Thaayorre, she set out to convince English-speakers around the world to abandon their native tongue in favor of the infinitely superior Kuuk Thaayorre. With this aim, Dr. Gaby relocated to California to take up an Assistant Professorship at the University of California, Berkeley.

Never afraid to ask the big questions, Dr. Gaby’s currently research asks how people around the world think and talk about space and time.

At age 16, **Nicholas M. Hellmuth, Ph.D.** was infected with Maya fever when he visited the Maya ruins of Palenque after attending summer school in Mexico to learn Spanish. There was no turning back. Hellmuth returned to prep school in Missouri, wrote his high school thesis on the Maya, and with the \$50 first prize money, plus financial help from his parents and grandmother, he returned to explore pre-Columbian Mexico. While in Tabasco, he was invited along on a Mexican National Institute of Anthropology and History expedition to Bonampak, so at the tender age of 17, he was hiking through the southern Mexican jungle with a team of archaeologists. For several years thereafter, Hellmuth spent every summer in Mexico, taking a train from St. Louis, then a bus. He reached Copan, Honduras, at age 18 on the back of a cargo truck. By age 19, Hellmuth had also traveled to Tikal, Guatemala. At age 20, Nicholas, and his crew of Norberto Tesucun and Alejandro Montejo de la Cruz, discovered the Tomb of the Jade Jaguar at Tikal, Guatemala, the second richest royal tomb yet found for the Late Classic period in all of Guatemala. Artifacts from this burial are among the national treasures of Guatemala.

Dr. Hellmuth earned a Bachelor of Arts degree, cum laude, from Harvard University in 1967; a Master of Arts degree from Brown University in 1969, and a Ph.D. degree in art history from Karl Franzens Universitaet, in Graz, Austria. In addition to his extensive work, spanning decades, in Mexico and Guatemala, Hellmuth has also done archaeological field work in Peru, once for the Peabody Museum of Archaeology and Ethnology (Harvard University) and a second season for the Peabody Museum of Natural History (Yale University). In addition to studying Maya archaeology, Dr. Hellmuth is intensely interested in tropical flora and fauna, and recently finished a five-year honorary position at Yale’s Peabody Museum of Natural History. He has served as a Visiting Professor at the National Museum of Ethnology, in Osaka, Japan.

Nicholas Hellmuth has always been “a complete fanatic for thorough photography” and has profound expertise in digital photography, digital printing of fine art photography, and public education on large format inkjet printers by means of evaluations of hardware, software, inks, and media. Dr. Hellmuth resides in Guatemala when not consulting or lecturing around the world. Next year he finishes a seven-year stint as Visiting Professor, and Director, Large Format Digital Imaging Division, College of Technology, Bowling Green State University. Dr. Hellmuth, who is tri-lingual, is moving in 2008 and is already lecturing more often at universities in Europe.

Steve Mirsky, M.Sc. has been an editor at Scientific American magazine for 10 years. Mirsky's personal evolutionary path encompasses a degree from the American Academy of Dramatic Arts, acting in summer stock, a bachelors' degree from City University of New York, hosting a morning radio show and a masters' degree in chemistry from Cornell University.

Mirsky left chemistry (to the relief of the American Chemical Society) for journalism after receiving an American Association for the Advancement of Science (AAAS) Mass Media Fellowship in 1985, which he spent at the NBC TV affiliate in Miami. Other academic fellowships include two stints (general, 1993, and molecular evolution, 2001) at the Marine Biological Laboratory at Woods Hole, a Reuters Foundation Fellowship in Medical Journalism at Columbia University in 1997 and the Knight Science Journalism Fellowship at MIT for the 2003–2004 academic year (during which he also attended a semester of criminal law with Alan Dershowitz at Harvard Law School).

Mirsky is in his 11th year writing the Antigravity column, a rare venue for (alleged) humor in the world of science. In February, 2006, he launched the weekly podcast of Scientific American, "Science Talk", which was followed in September by the daily podcast, "60 Second Science." Both are available at iTunes and at the Scientific American website. He is also an award-winning wildlife photographer.

John Rennie joined the staff of Scientific American as a member of the Board of Editors in 1989, having previously worked as a science writer covering biology, technology and medicine for a variety of publications.

His writings have appeared in The Economist, The New York Times, Longevity and other publications. His numerous television and radio appearances include ABC World News Weekend, The Newshour with Jim Lehrer, the A&E special Scams, Schemes and Scoundrels, Fox News Channel, Entertainment Tonight, ABC News Overnight, CBS Early Show, and National Public Radio's Science Friday.

John Rennie has been the Editor in Chief of Scientific American magazine since 1994. During his tenure, the magazine has won two National Magazine Awards for editorial excellence with the single-topic issues "What You Need to Know about Cancer" (Sept. 1996) and "A Matter of Time" (Sept. 2002). In 2000 Rennie was honored with the Sagan Award for Public Understanding of Science, bestowed by the Council of Scientific Society Presidents. In September 2003 the Potomac Institute for Policy Studies honored him with its Navigator Award for distinguished service in support of national science and technology policy.

Since his origin as interstellar dust 15 billion years ago, **Bebo White's** interests have included computational physics, high energy physics, networked information retrieval and programming languages, high performance computing, grid computing, and physics event visualization.

White has been described as "a historical Web artifact" because of his seminal involvement with World Wide Web technology and the introduction of the first website in the United States at the Stanford (University) Linear Accelerator Center (SLAC). More precisely White is an information specialist who spent two decades addressing the computing challenges of the SLAC physics community.

Mr. White is internationally recognized as one of the pioneers of the World Wide Web. He was introduced to Web technology during a sabbatical at Geneva's European Organization for Nuclear Research (CERN) in 1989. His 1991 team participation in implementing SLAC's website, early advocacy for the Web, and his intense and ongoing involvement in Web technology have earned him the tag "the first U.S. Webmaster."

The 1996 MicroTimes 100 listed Bebo White in the ranks of those making outstanding contributions to personal computing. He is a member of the International World Wide Web Conference Committee (IW3C2) and a member of the International Academy of Digital Arts and Sciences.

White's current research and passion focuses on Web Engineering (he is a Managing Editor of the Journal of Web Engineering) and Semantic Web applications. He serves as Chair of the IEEE Working Group on Web Engineering. Additional information can be found at www.bebowhite.com.