

SCIENCE MEETS SCIENCE FICTION



Smithsonian magazine
THE FUTURE IS HERE
FESTIVAL

APRIL 22-24, 2016 | WASHINGTON D.C.

**“The future belongs to those who believe in the beauty of their dreams.”
—ELEANOR ROOSEVELT**

This year’s theme, Science Meets Science Fiction, celebrates those scientists, authors, technologists and other visionaries whose dreams have inspired them to build powerful, inspiring and influential pieces of our collective future.

During this multi-day event at the Smithsonian museums and Shakespeare Theatre’s Sidney Harman Hall we are bringing together world-renowned experts and mind-bending innovators in the fields of science, science fiction, technology, and inner and outer space who are working at the intersection of today and tomorrow.

Buckle up. It’s going to be a wild ride.

We would like to thank our presenting sponsor:

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At Lockheed Martin, we’re engineering a better tomorrow.

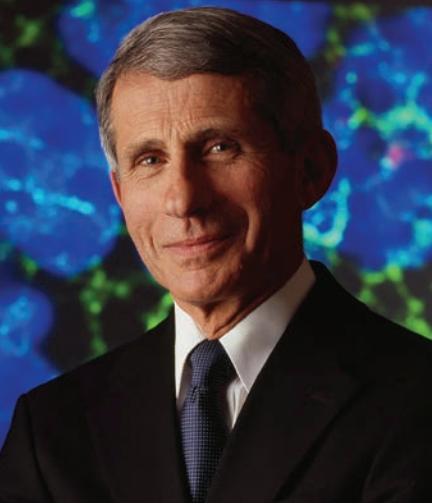
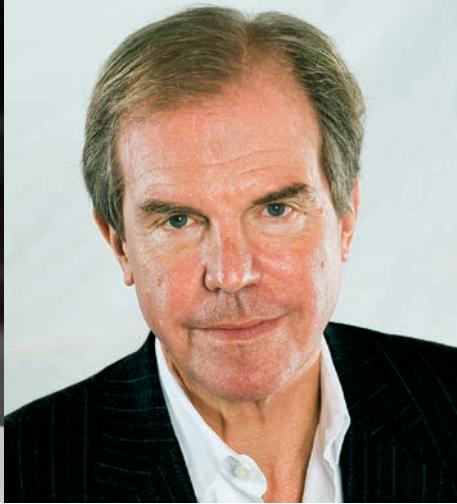
We would also like to thank our starry-eyed collaborators:

The John Templeton Foundation

The Arthur C. Clarke Center for Human Imagination

The Future Is Here Festival is presented with participation from NASA

Smithsonian magazine



SATURDAY

9:00am: Welcome Remarks

MICHAEL CARUSO
Editor in Chief, *Smithsonian Magazine*

9:05am: Visiting the Future: A Trip Report

NICHOLAS NEGROPONTE

Co-founder of the MIT Media Lab,
Founder of One Laptop per Child Project
Nicholas Negroponte is the co-founder (with Jerome B. Wiesner) of the MIT Media Lab (1985), which he directed

for its first 20 years. A graduate of MIT, Negroponte was a pioneer in the field of computer-aided design and has been a member of the MIT faculty since 1966. He gave the first TED talk in 1984, as well as 13 since. He is author of the 1995 best seller *Being Digital*, which has been translated into more than 40 languages. In 2005 he founded the nonprofit One Laptop per Child, which deployed \$1 billion worth of laptops for primary education in the developing world. In the private sector, Negroponte served on the board of directors of Motorola (for 15 years) and was general partner in a venture capital firm specializing in digital technologies for information and entertainment. He has personally provided start-up funds for more than 40 companies, including Zagat and *Wired* magazine.

9:30am: The Future of Rocks

KIRK JOHNSON
Director, Smithsonian National Museum of Natural History (NMNH)

Kirk Johnson is a paleobotanist who spent most of his career at the Denver Museum of Nature & Science, where he led expeditions that resulted in the discovery of more than 1,400 fossil sites on all continents. His research focuses on fossil plants, the extinction of the dinosaurs, and methods for dating rocks and fossils. He led the Snowmastodon Project, the excavation of an amazing ice age site discovered by construction workers in Snowmass Village, in Colorado, on October 14, 2010. This dig was featured in the NOVA documentary

“Ice Age Death Trap,” and in his book *Digging Snowmastodon, Discovering an Ice Age World in the Colorado Rockies.*

9:55am: Interview

ANTHONY FAUCI, MD
Director, National Institute of Allergy and Infectious Diseases, National Institutes of Health

Since his appointment as NIAID director in 1984, Dr. Fauci has overseen an extensive research portfolio devoted to preventing, diagnosing, and treating infectious and immune-mediated diseases. He is also chief of the NIAID Laboratory of Immunoregulation, where he has made numerous important discoveries related to HIV/AIDS and is one of the most-cited scientists in the field. Dr. Fauci serves as one of the key advisers to the White House and Department of Health and Human

Services on global AIDS issues, and on initiatives to bolster medical and public health preparedness against emerging infectious disease threats such as Ebola and pandemic influenza. He was one of the principal architects of the President’s Emergency Plan for AIDS Relief (PEPFAR), which has already been responsible for saving millions of lives throughout the developing world.

Interviewed by **TERENCE MONMONEY**
Deputy Editor, *Smithsonian Magazine*

10:20am: Interview

MARTINE ROTHBLATT
Transhumanist and Founder of Sirius Radio, Geostar and United Therapeutics
Martine Rothblatt is chairman & co-CEO of United Therapeutics (UTHR), and president & CEO of its Lung

Biotechnology public benefit company. She previously created and led Sirius XM as its chairman & CEO, after pioneering the civilian satellite navigation industry. She has JD and MBA degrees from UCLA, and a PhD in medical ethics from the Royal London School of Medicine & Dentistry. Her patented inventions are in satellites, pharmaceuticals and cognitive software. Dr. Rothblatt’s recent books are on manufactured organs (*Your Life or Mine*, Ashgate) and cyber ethics (*Virtually Human*, St. Martin’s).

Interviewed by **MICHAEL CARUSO**
Editor in Chief, *Smithsonian Magazine*

10:45: BREAK

From left to right: Michael Caruso, Nicholas Negroponte, Kirk Johnson, Anthony Fauci, Martine Rothblatt

Speakers and schedules subject to change

11:15am: Tribes on the Edge, a Story of our Global Human Tribe Set in the Midst of the Amazon Jungle

CÉLINE COUSTEAU

Founder and Executive Director of CauseCentric Productions

Founder and executive director of CauseCentric Productions, a nonprofit organization that creates cause-focused multimedia content, Céline holds a degree in psychology, a masters in international and intercultural management and is fluent in three languages. She travels as a public speaker and is a member of the World Economic Forum Council on Oceans, collaborating to provide recommendations to the WEF about ocean issues. Céline is the daughter of ocean explorer and filmmaker Jean-Michel Cousteau and granddaughter of the legendary Jacques-Yves Cousteau.

with Artist

JEREMY COLLINS

11:40pm: Save the Oceans, Feed the World: The Future of Fish

ALEXANDRA COUSTEAU

Explorer, Storyteller, Environmental Advocate

A filmmaker and globally recognized advocate on water issues, Alexandra was named one of the World Economic

Forum's Young Global Leaders in 2010, Alexandra continues the work of her renowned grandfather Jacques-Yves Cousteau and her father, Philippe Cousteau, Sr. She has mastered the remarkable storytelling tradition handed down to her and has the unique ability to inspire audiences on the weighty issues of policy, politics and action. Her global initiatives seek to inspire and empower individuals to protect not only the ocean and its inhabitants, but also the human communities that rely on freshwater resources. In 2008, she was honored as a National Geographic Emerging Explorer and has founded Blue Legacy with the mission of empowering people to reclaim and restore the world's water, one community at a time.

12:05pm: **SURPRISE GUEST**

12:30pm: **LUNCH**

2:00pm:

Inspiring Tomorrow

BRUCE STERLING

Two-Time Hugo Award-Winning—Sci-Fi Author and Cyberpunk

A futurist, journalist, science-fiction author and design critic, Bruce Sterling is best known for his novels and his seminal work on the *Mirrorshades* anthology, which defined the cyberpunk genre. He is currently curator of the Casa Jasmina project at the Turin FabLab. His nonfiction works include *The Hacker Crackdown: Law*

and Disorder on the Electronic Frontier; Tomorrow Now: Envisioning the Next Fifty Years; and *Shaping Things*. He is a contributing editor of *Wired* magazine, and also writes a weblog. Sterling was formerly “visionary in residence” at ArtCenter College of Design in Pasadena and guest curator for the Share Festival of Digital Art and Culture in Turin, Italy, as well as the visionary in residence at the Sandberg Instituut in Amsterdam. In 2011, he returned to ArtCenter as visionary in residence to run a special project on augmented reality. Many prestigious venues have featured him, including *Nightline*, *The Late Show*, and *Time*, *Newsweek* and *The Wall Street Journal* among others.

2:30pm: Paving the Way for Human Exploration of Deep Space

TONY ANTONELLI

Chief Technologist, Exploration Systems, Civil Space, Space Systems Company, Lockheed Martin

Tony Antonelli is chief technologist, Exploration Systems for the Lockheed Martin Civil Space line of business. In this role, he is responsible for helping to expedite the human exploration strategy through the development and integration of both science objectives and human exploration goals. His efforts contribute to shaping a definitive path for sustainable human missions to Mars.

Tony is a retired Navy captain and former NASA astronaut who has accumulated over 4,700 flight hours in over 40 different kinds of aircraft and served as the pilot for two Space Shuttle missions. While serving at NASA, Tony exercised leadership roles within the Astronaut Office including the Space Launch System, Commercial Crew, Capsule Communicator (CAPCOM), and Space Shuttle Propulsion.

2:55pm: Internet is Evolving—A Glimpse at 2016–2036

VINTON G. CERF

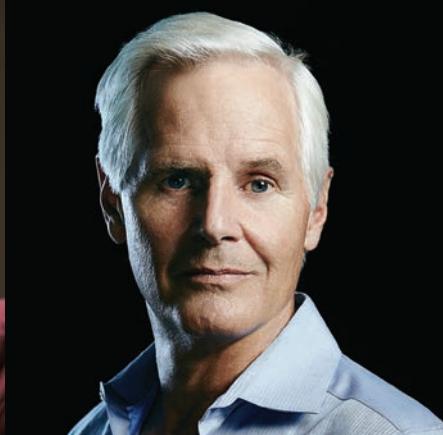
Vice President and Chief Internet Evangelist, Google

Vinton G. Cerf co-designed the TCP/IP protocols and the architecture of the Internet and is chief internet evangelist for Google. He is a member of the National Science Board and National Academy of Engineering and a Fellow of ACM, IEEE, AAAS and BCS. Cerf received the U.S. Presidential Medal of Freedom, U.S. National Medal of Technology, Queen Elizabeth Prize for Engineering, Prince of Asturias Award, Japan Prize, ACM Turing Award, Légion d'Honneur and 25 honorary degrees.

Clockwise from top left: Alexandra Cousteau, Céline Cousteau, Tony Antonelli, Vinton G. Cerf, Bruce Sterling

Speakers and schedules subject to change





3:20pm: ARTHUR C. CLARKE PANEL

How to Design the Future

SHELDON BROWN (Moderator)

Sheldon Brown combines computer science research with vanguard cultural production in the creation of virtual reality installations exhibited around the world. He holds the MacArthur Foundation Endowed Chair of Digital Media and Learning at UCSD, where he is director of the Arthur C. Clarke Center for Human Imagination. His work is supported in part by the National Science Foundation, the National Endowment for the Arts, IBM, Intel, Sony and Google.

BRUCE STERLING
Science-Fiction Author

VINTON G. CERF
Vice President and Chief Internet Evangelist,
Google

FIONA RABY

Professor of Design and Emerging Technology, Parsons

Fiona Raby is professor of design and emerging technology at Parsons, The New School for Design, and a partner in the design studio Dunne & Raby. She is also a professor of industrial design (studio-id2) at the University of Applied Arts in Vienna (2011-2016)—Between 2011 and 2015 she was a reader in design interactions at the Royal College of Art in London and, from 1995, taught there in architecture, computer related design and design interactions. Dunne & Raby uses design as a medium to stimulate discussion and debate among designers, industry, and the public about the social, cultural and ethical implications of existing and emerging technologies. Raby is co-author, with Anthony Dunne, of *Design Noir* (2001) and *Speculative Everything* (2013). Projects include *Technological Dream Series, No 1: Robots* (2007), *Designs for an Overpopulated Planet: Foragers* (2010), *The United*

Micro Kingdoms (2013) and *The School of Constructed Realities* (2015). Their work has been exhibited at MoMA in New York, the Pompidou Centre in Paris and the Design Museum in London, and is in several permanent collections including at MoMA, the Victoria and Albert Museum, and the Austrian Museum of Applied Arts. Dunne & Raby received the inaugural MIT Media Lab Award in 2015.

3:45: BREAK

4:15pm: Interview

TIM MILLER

Director of *Deadpool*

Tim Miller is a director, visual effects artist and co-founder of Blur Studio in Los Angeles. He made his feature film directing debut with *Deadpool*, the top-grossing movie of 2016. He was nominated for the Academy Award for Best Animated Short Film as co-story writer and executive producer of the

short animated film *Gopher Broke* (2004). Miller also designed the opening sequences of *The Girl with the Dragon Tattoo* and *Thor: The Dark World*.

ADITYA SOOD

President of Simon Kinberg's Production Company, Genre Films

Info on page 14.

Interviewed by **BRIAN TRUITT**

A native of the Washington, D.C., metropolitan area, Brian Truitt is an entertainment writer and film critic for *USA Today*. He covers movies, TV, books, comics and anything nerdy for the newspaper, as well as co-hosts *The Mothership* geek-culture podcast. Brian lives in Northern Virginia with his wife and daughter, who learned how to say “Star Wars” at a very young age.

4:40pm: Interview

CHRIS CARTER

Creator of *The X-Files*

Described by *TIME* magazine as a “televisionary,” Chris Carter created one of the most successful television franchises of all time with his award-winning *The X-Files*. The show ran a remarkable nine seasons on Fox, is still seen today in over 60 countries, and spawned two films and several comic book and video game adaptations. The impact of Carter’s series is such that in 1997 *TIME* magazine named him one of “The 25 Most Influential People in America.” Carter also created the shows *Millennium*, *Harsh Realm* and *The Lone Gunman*, and in 2016 brought *The X-Files* back to television with a 6-episode limited run on Fox.

Interviewed by **BRIAN TRUITT**

5:05pm: Performance

brought to you by THE WASHINGTON POST

ARCATTACK

Creators of the Original Singing Tesla Coil

The crew of ArcAttack use their high-tech wizardry to generate a truly “electrifying” performance. The show perfectly combines ArcAttack’s love of rock music and their love of science, creating a show you will never forget.

From left to right: Sheldon Brown, Fiona Raby, Brian Truitt, Tim Miller, Chris Carter, ArcAttack

Speakers and schedules subject to change

9:00am: Welcome Remarks

MICHAEL CARUSO
Smithsonian magazine Editor in Chief

9:05am: Think Big Series supported by JOHN TEMPLETON FOUNDATION

Are We Looking for the Right Extra-Terrestrials? + Q&A

SETH SHOSTAK

Director of Search for Extraterrestrial Intelligence (SETI)

Senior astronomer at the SETI Institute, in Mountain View, California, Seth has an undergraduate degree in physics from Princeton University and a doctorate in astronomy from the California Institute of Technology. Seth has conducted radio astronomy research on galaxies, and has published papers in professional journals and more than 400 articles on various topics including astronomy and technology. He lectures at Stanford, was a distinguished speaker for the American Institute of Aeronautics and Astronautics and was chair of the International Academy of Astronautics' SETI Permanent Committee. Seth's most recent tome is *Confessions of an Alien Hunter: A Scientist's Search for Extraterrestrial Intelligence* (National Geographic).

9:40am: Think Big Series supported by JOHN TEMPLETON FOUNDATION

Are We Smart Enough to Know How Smart Animals Are? + Q&A

FRANS DE WAAL

Professor of Primate Behavior, Emory University, and Author

Frans de Waal has been named one of *TIME* magazine's 100 Most Influential People. The author of *Our Inner Ape*, among many other works, he is the C.H. Candler Professor in Emory University's Psychology Department and director of the Living Links Center at the Yerkes National Primate Research Center. He lives in Atlanta.

10:15am: BREAK & BOOK SIGNING WITH FRANS DE WAAL

10:50am: Performance

MARCO TEMPEST

Cyber Illusionist

Marco Tempest is a cyber illusionist, combining magic and technology to produce astonishing illusions. He began his performing career as a stage magician and manipulator, winning many awards and establishing an international reputation as one of the world's most unique

performers. His interest in computer-generated imagery led him to incorporate video and digital technology in his work and develop a new form of contemporary illusion. The expansion of the Internet and social media have provided more opportunities for digital illusions and ways of interacting with audiences and creating magically augmented realities. Marco continues to perform around the world, is a media consultant on the subject of magic and illusion, and lectures at international conferences on the psychology of deception and creative thinking. Marco is a Directors Fellow at the MIT Media Lab.

11:15am: Think Big Series supported by JOHN TEMPLETON FOUNDATION

The Mattering Map

REBECCA NEWBERGER GOLDSTEIN

Philosopher and Author

Rebecca Newberger Goldstein is a philosopher who is also a novelist and public intellectual. She is the author of ten books, many of which cross the divide between fiction and nonfiction. Her latest book is *Plato at the Googleplex: Why Philosophy Won't Go Away*. She has won numerous awards for her fiction and scholarship, including a MacArthur Fellowship, popularly known as the "genius prize," and the National Humanities Medal, awarded by President Barack Obama.

11:50am: Think Big Series supported by JOHN TEMPLETON FOUNDATION

Mapping the Nearby Stars for Habitable Worlds + Q&A

SARA SEAGER

Planetary Scientist and Astrophysicist

Professor Sara Seager is a planetary scientist and astrophysicist. She has been a pioneer in the vast and unknown world of exoplanets, planets that orbit stars other than the sun. Her groundbreaking research ranges from the detection of exoplanet atmospheres to innovative theories about life on other worlds to development of novel space mission concepts. Now on a quest to discover a true Earth twin, the field's holy grail, she's dubbed an "astronomical Indiana Jones." Dr. Seager earned her PhD from Harvard University and is now the Class of 1941 Professor of Planetary Science and professor of physics at the Massachusetts Institute of Technology. Seager is a 2013 MacArthur Fellow and was named in *TIME* magazine's "25 Most Influential in Space" in 2012.

12:20pm: LUNCH

Clockwise from top left: Rebecca Newberger Goldstein, Marco Tempest, Frans de Waal, Sara Seager, Seth Shostak

Speakers and schedules subject to change





NASA Introduction by PHIL PLAIT

2:00pm: Interview

DAVA NEWMAN

NASA Deputy Administrator

Nominated in January 2015 by President Barack Obama and confirmed by the U.S. Senate in April 2015 to serve as the deputy administrator of the National Aeronautics and Space Administration, Newman is responsible for providing overall leadership, planning and policy direction for NASA. She performs the duties and exercises the powers delegated by the administrator, and also is responsible for articulating the agency's vision and representing NASA to the Executive Office of the President, Congress, and heads of federal and other appropriate government agencies, international organizations, and external organizations and communities. Prior to

her tenure with NASA, Newman was the Apollo Program Professor of Astronautics at MIT in Cambridge.

Interviewed by PHIL PLAIT

2:25pm: The Martian: Science Fiction and Science Fact

JIM GREEN

NASA Scientist

Jim Green became director of the Planetary Science Division at NASA Headquarters in 2006. He received his PhD in space physics from the University of Iowa in 1979 and began working in the Magnetospheric Physics Branch at NASA's Marshall Space Flight Center in 1980. At Marshall, Green developed and managed the Space Physics Analysis Network, which provides scientists all over the world with rapid access to data,

to other scientists, and to specific NASA computer and information resources. From 1985 to 1992 he was the head of the National Space Science Data Center (NSSDC) at Goddard Space Flight Center (GSFC). In 1992, he became chief of the Space Science Data Operations Office, then in 2005 became the chief of the Science Proposal Support Office. While at GSFC, Green was a co-investigator and the deputy project scientist on the Imager for Magnetopause-to-Aurora Global Exploration (IMAGE) mission.

2:50pm: NASA's Mars 2020 Mission—and Beyond

ADAM STELTZNER

NASA's "Rock and Roll Engineer"

Adam Steltzner is an engineering fellow at Jet Propulsion Laboratory and is

leading the development of the Sampling System for the Mars 2020 project. He recently led the team that developed the Curiosity Rover's landing system. Adam joined the JPL in 1991 and has worked on various projects including Galileo, Cassini, Mars Pathfinder, Champollion, Comet Nucleus Sample Return, Mars Exploration Rovers and the Mars Science Laboratory.

3:15pm: BREAK & BOOK SIGNING WITH ADAM STELTZNER

3:40pm: Augmented Exploration

PARKER ABERCROMBIE

Software Engineer

Parker Abercrombie is a software engineer at NASA's Jet Propulsion Laboratory, where he investigates ways that software can transform how we explore and

understand the universe around us. Prior to joining JPL, Parker worked with teams at NASA and the U.S. Department of Energy on software to visualize geographic data. Parker holds an M.A. in Geography from Boston University.

ALEXANDER MENZIES

Software Lead for Augmented and Virtual Reality Development at NASA

Alexander Menzies builds holograms of Mars. Alex serves as the software lead for augmented and virtual reality development at NASA's Jet Propulsion Laboratory. His recent work includes an immersive tool used to operate the Curiosity Mars Rover called OnSight and a head mounted assistant for astronauts onboard the international space station called SideKick. Alex is also the principle inventor of the NASA Photogrammetry Pipeline which is responsible for generating the most accurate 3D models of the Martian surface ever made.

TONY VALDERRAMA

Software Engineer

Tony Valderrama is a software engineer at NASA's Jet Propulsion Laboratory, where he develops science and operations software for robotic missions. Tony holds a B.S. in Computer Science from the Massachusetts Institute of Technology.

From left to right: Dava Newman, Jim Green, Adam Steltzner, Parker Abercrombie, Alex Menzies, Tony Valderrama

Speakers and schedules subject to change



4:05pm: Interview

ADITYA SOOD

President of Simon Kinberg's Production Company, Genre Films; Producer, *The Martian*
Aditya Sood is president of Simon Kinberg's production company, Genre Films. He is a producer of the Golden Globe-winning and Oscar nominated film *The Martian*, which opened worldwide in October 2015, and an executive producer on *Deadpool*, starring Ryan Reynolds and based on the Marvel Comics character. It opened worldwide in February 2016. He is also an executive producer on the upcoming ABC political thriller *Designated Survivor*, starring Kiefer Sutherland. He started his career at New Line Cinema and DreamWorks. Aditya was born in England, and grew up in Seattle. He graduated from Pomona College with a degree in politics, philosophy and economics. He lives in Los Angeles with his wife and their 9-month-old son.



ANDY WEIR via Skype

Author, *The Martian*

Andy Weir was first hired as a programmer for a national laboratory at age 15 and has been working as a software engineer ever since. He is also a lifelong space nerd and a devoted hobbyist of subjects like relativistic physics, orbital mechanics and the history of manned spaceflight. *The Martian* is his first novel.

*From top to bottom: Aditya Sood, Andy Weir, Phil Plait
Speakers and schedules subject to change*

Interviewed by PHIL PLAIT

Phil Plait is an astronomer, author, TV documentary host and all-around science evangelizer. He worked for a decade with NASA's Hubble Space Telescope, and now writes the popular Bad Astronomy blog for Slate.com. He's also a bona fide sci-fi nerd, an unabashed *Star Trek* fan, and once gave William Shatner a meteorite. He hopes to once have been inventing time travel.

4:30pm: Closing Remarks

MICHAEL CARUSO

Editor in Chief, *Smithsonian* magazine



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