

Impact Partners presents

in association with

Vulcan Productions and **CNN Films**

PANDORA'S PROMISE

A Robert Stone film

Official Selection – Sundance Film Festival

www.pandoraspromise.com

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PANDORA'S PROMISE

The Filmmakers

Written & Directed by ROBERT STONE
Editor DON KLESZY
Original Score GARY LIONELLI
Cinematography ROBERT STONE
HOWARD SHACK
Sound Designer COLL ANDERSON
Produced by ROBERT STONE
JIM SWARTZ
SUSAN SWARTZ
Executive Producers DAN COGAN
PAUL G. ALLEN
JODY ALLEN
AIMEE & FRANK BATTEN
SIR RICHARD BRANSON
ERIC DOBKIN
LYNN, GAVIN & DIANA DOUGAN
STEVE KIRSCH
ROSS KONINGTEIN
RAY ROTHROCK
Co-Executive Producer PETER WAGNER

Featuring

STEWART BRAND
MARK LYNAS
MICHAEL SHELLENBERGER
GWYNETH CRAVENS
RICHARD RHODES
CHARLES TILL
LEN KOCH

www.pandoraspromise.com

PANDORA'S PROMISE

“Whatever your stance, Stone’s compelling film opens Pandora’s box and promises to change the conversation for years to come.”

– *Sundance Film Festival*

“When was the last time you saw a documentary that fundamentally changed the way you think?... *Pandora’s Promise* is built around what should be the *real* liberal agenda: looking at an issue not with orthodoxy, but with open eyes.”

– Owen Gleiberman, *Entertainment Weekly*

Short Synopsis

Impact Partners, in association with **Vulcan Productions** and **CNN Films**, presents **PANDORA’S PROMISE**, the groundbreaking new film by Academy-Award®-nominated director Robert Stone. The atomic bomb and meltdowns like Fukushima have made nuclear power synonymous with global disaster. But what if we’ve got nuclear power wrong? An audience favorite at the Sundance Film Festival, **PANDORA’S PROMISE** asks whether the one technology we fear most could save our planet from a climate catastrophe, while providing the energy needed to lift billions of people in the developing world out of poverty. In his controversial new film, Stone tells the intensely personal stories of environmentalists and energy experts who have undergone a radical conversion from being fiercely anti to strongly pro-nuclear energy, risking their careers and reputations in the process. Stone exposes this controversy within the environmental movement head-on with stories of defection by heavy weights including Stewart Brand, Richard Rhodes, Gwyneth Cravens, Mark Lynas and Michael Shellenberger. Undaunted and fearlessly independent, **PANDORA’S PROMISE** is a landmark work that is forever changing the conversation about the myths and science behind this deeply emotional and polarizing issue.

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PANDORA'S PROMISE

Long Synopsis

In the next few decades, humankind will need to double, or even triple energy production as billions of people in the developing world lift themselves out of poverty and begin to live modern lives. Unless the energy of the future is clean and non-CO₂ emitting, the risk of triggering global climate catastrophe is almost certain. With the world's unquenchable thirst for energy and its resulting threat to our environment, the stakes may be nothing less than the survival of the planet. This monumental dilemma, and the limitations of solutions like wind and solar, have left the mainstream environmental movement on the verge of utter disarray.

Tackling this challenge head-on comes **PANDORA'S PROMISE**, the highly anticipated and debated new work by internationally-acclaimed filmmaker Robert Stone. Three years in the making and filmed on four continents, this meticulously researched and beautifully crafted film asks whether the one energy source that has the ability to completely replace fossil fuels might be the one technology that environmentalists fear the most: nuclear power.

Uniquely positioned to explore this question, Stone began his filmmaking career directing one of the great anti-nuclear documentaries, the Oscar®-nominated *Radio Bikini*. In 2009, his celebration of the rise of the modern environmental movement, *Earth Days* (Sundance Closing Night Film), established him as one of the great chroniclers of environmentalism.

With a no-holds-barred approach to nuclear power's troubled past, Stone opens **PANDORA'S PROMISE** with a trip inside the "exclusion zone" at Fukushima, accompanied by British climate expert Mark Lynas. He moves on to revisit and meditate on the iconic accidents at Three Mile Island and Chernobyl. Investigating the genesis of our collective anti-nuclear psyche – from the dropping of the atomic bomb on Hiroshima, the shadow of nuclear weapons testing and the entire baby boomer generation coming of age during the Cold War – Stone reveals that much of what passes for common knowledge about nuclear energy turns out to be based on a false premise: the conflation of nuclear power with nuclear weapons.

Intrigued by the story of a growing number of environmentalists who have had a fundamental change of heart about nuclear energy, Stone elegantly juxtaposes the personal narratives of five extraordinary individuals – Stewart Brand, Richard Rhodes, Gwyneth Cravens, Mark Lynas and Michael Shellenberger – to explore how and why they have come to see advanced nuclear power as humankind's greatest hope. Tracing their transformations, Stone turns to science, taking viewers along for the ride on his subjects' intellectual odyssey. The film also reveals the career trajectories of two pioneering scientists who led the development of a safer and very different nuclear energy technology than what the world has come to know.

Rather than being dismissed after Fukushima, nuclear power is now gaining traction, with President Obama cheering the U.S. Department of Energy's purchase of small modular reactors, China and India aggressively pursuing a dramatic expansion of their reactor fleet with advanced nuclear designs, and climate scientist James Hansen's recent scientific paper focusing on the promise of nuclear energy as our best hope for dramatically reducing CO2 emissions.

As a new generation looks beyond the ideological orthodoxy that has commanded mainstream environmental thinking on climate and energy – on both the Left and the Right – nuclear power will inevitably be a part of this critical debate.

Everyone thinks they know the story of Pandora's Box: she opens the box and all the terrors of the world come flying out. But what most people forget, or perhaps never learned, is that the story does not end there. For according to the myth, at the bottom of the box, Pandora found hope.

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PANDORA'S PROMISE

Director's Statement

I've considered myself a passionate environmentalist for about as long as I can remember. My mother read me Silent Spring when I was nine and the specter of the Cold War nuclear arms race was not an uncommon topic around the dinner table in my family. So my anti-nuclear and environmental roots run very deep. My first film was an anti-nuclear weapons documentary, *Radio Bikini*, that premiered at Sundance in 1988 and went on to receive an Oscar® nomination for Feature Documentary. My film *Earth Days*, which was the Closing Night Film at Sundance in 2009, chronicles the rise of the environmental movement of my youth. In the course of making *Earth Days* I began for the first time to see the deep pessimism that has infused today's environmental movement, and to recognize the depth of its failure to address climate change. It was initially through getting to know Stewart Brand that I was introduced to a new and more optimistic view of our environmental challenges that was pro-development and pro-technology. From there I began to seek out and discover a small but growing cadre of people around the world who were beginning to stand up and challenge what had become the rigid orthodoxy of modern environmentalism.

It's no easy thing for me to have come to the conclusion that the rapid deployment of nuclear power is now the greatest hope we have for saving us from an environmental catastrophe. Yet this growing realization has led me to question many of the founding tenets of traditional environmentalism, from the belief that we can dramatically reduce our energy demand through energy efficiency, to the belief that solar and wind will one day power the planet. The almost theological adherence to a set of unquestionable beliefs by most liberals and environmentalists has likely contributed as much or more to prolonging our addiction to fossil fuels as the equally appalling state of denial among many conservatives when it comes to climate change. Both sides are locked into rigid, self-righteous ideological positions with potentially disastrous consequences for us all unless we begin to face the facts.

For the past three years I have devoted almost every waking moment to taking these ideas and shaping them into a documentary about what is perhaps the biggest and most unwieldy subjects imaginable: how do we continue to power human civilization without destroying the environmental conditions that have made modern civilization possible? I knew from the beginning that this film would have to be firmly grounded in personal narrative if it were to have any impact at all on a mass audience. Early on, I determined that the film would be framed around a few key individuals who had undergone a dramatic intellectual metamorphosis on the issue of nuclear power, as I myself had done. The evolution of their apostasy on this issue – their journey from being staunchly anti-nuclear to passionately pro-nuclear – forms the central dramatic arc of the film. My hope is to take the audience on a similar journey of discovery through the process of watching the film.

PANDORA'S PROMISE is without question the most personal and important film of my career. I've learned that just about everything I thought I knew about energy turned

out to be wrong. And most of what I had been led to believe about nuclear energy and its historical events turned out to be significantly different from what had really happened.

The making of this film has taken me to four continents on a grand tour of the hidden world of nuclear energy. I've been inside the doomed power plant at Chernobyl (the first outside cameraman to do so, I believe), deep into the Fukushima exclusion zone, and to a popular beach in Brazil that has a naturally occurring background radiation level that's over 300 times what is considered "normal!" I've visited a little known research facility in Idaho where a new kind of reactor was developed 20 years ago that can't meltdown and is fueled by nuclear waste.

If there was a single ah-ha moment for me it was when I was granted entry into a room in France (the size of a basketball court) where all the waste from powering 80% of the country for 30 years is stored: four cylindrical tubes 10 meters long and 1 meter wide are all that's left from powering the city of Paris for 30 years with clean nuclear energy! I thought, "My God, what on Earth were we thinking?"

Robert Stone
April 22, 2013

PANDORA'S PROMISE

About the Interviewees

STEWART BRAND – The Counter-Culture Icon

Stewart Brand is considered a giant of the American environmental movement. He gained early renown as the founder of *The Whole Earth Catalog*, the iconic bible of the back-to-the-land movement of the late '60's and early '70's. His influence in multiple arenas of culture, politics, science and technology has been massive, iconoclastic and profoundly original. Brand's unique road has led him through cultural milestones from Native American issues, Ken Kesey's *Merry Pranksters*, organizing historic rock concerts, and his early prediction that when humans finally saw a photograph of the whole Earth from space that it would usher in a new era of environmental awareness. He famously published that iconic image on the cover of the *Whole Earth Catalog*. Brand has founded many remarkable organizations including The WELL, the oldest online community; The Global Business Network (GBN); and, The Long Now Foundation. Brand also published the *CoEvolution Quarterly* and the *Whole Earth Software Review*, which were combined in 1985 to form the *Whole Earth Review*. He is the author of numerous books, most recently, Whole Earth Discipline: An Eco-pragmatist Manifesto.

It was Brand's long-time interest in the potential of technology to solve human problems that led to his apostasy on the issue of nuclear power in 2005, when he became one of the first high profile environmentalists to do so. When in 2003 he was commissioned to participate in a study for the Pentagon on the national security implications of abrupt climate change, he looked into the realities of nuclear power as a greenhouse-gas-free source of electricity and discovered he had been misled for decades on the subject by his fellow environmentalists. He has been widely influential among a new generation of environmental leaders who are rethinking traditional approaches to climate change.

MARK LYNAS – The Environmentalist

Mark Lynas is a highly regarded British author, journalist and environmental activist who focuses primarily on climate change. In 2004, he published High Tide: The Truth About Our Climate Crisis, where he reported on his visits to the world's climate change hot spots. His book Six Degrees: Our Future on a Hotter Planet (2008) won the prestigious Royal Society Prize for science writing, and has been translated into 22 languages. The National Geographic Channel made a documentary based on the book, called *Six Degrees Could Change the World*, which was voiced by Alec Baldwin and has been seen by tens of millions of people around the world. In 2009, he was appointed advisor on climate change to Mohammed Nasheed, then President of the Maldives, and was involved in the Copenhagen Climate Summit as well as the Maldives' effort to become the world's first carbon neutral country by 2020, a goal to primarily be achieved using solar power.

Lynas' epiphany came earlier in 2005 when he attended a conference on alternative energies in Oxford and discovered that nuclear power was providing a sixth of the world's electricity without emitting carbon, while wind and solar still occupied only tiny proportions. His subsequent column in the *New Statesman* magazine suggesting Greens look again at nuclear ignited a storm of vitriolic reaction, and the refusal of other environmentalists to discuss nuclear energy rationally caused him to question their core beliefs in other areas as well, such as GMOs in agriculture. He expanded on that exploration in his book *The God Species: Saving the Planet in the Age of Humans*.

Lynas is now only one of many environmentalists who are standing up in support of nuclear power as a vital solution to climate change. However he continues to support the deployment of renewables like wind and solar, and recently helped bring together the British renewables and nuclear industry groups into an informal carbon-free energy coalition that is aiming to completely reshape the British energy sector. Lynas is currently writing a companion book to **PANDORA'S PROMISE** that will be published later this year under the same title.

MICHAEL SHELLENBERGER – The Activist

Michael Shellenberger began his career in the 1990's as an activist leader for a wide-ranging group of progressive causes, from the movement to reform Nike's labor practices in Asia, to saving the Headwaters Forest. In 2002, he and Ted Nordhaus co-founded the Apollo Alliance, now the Blue-Green Coalition, which advocated for a \$300 billion investment in renewable energy and energy efficiency — a demand that was partially realized by President Obama and Congress in 2009.

Shellenberger and Nordhaus are today co-founders of The Breakthrough Institute, an influential center-left public policy think tank based in Oakland, California, that focuses on energy, climate, security, human development and politics.

Shellenberger and Nordhaus rose to fame with the publication in 2004 of "The Death of Environmentalism," which argued that traditional environmentalism had driven itself into an ideological cul-de-sac and had proven itself incapable of addressing the problem of climate change in a meaningful way. The piece sparked a national debate, inspired a generation of young environmentalists, and is still widely discussed and taught today.

Their 2007 book, *Break Through: From the Death of Environmentalism to the Politics of Possibility*, was called "the best thing to happen to environmentalism since Rachel Carson's *Silent Spring*" by *Wired*. They received the Green Earth Book Award in 2007 and were featured in *Time* magazine's 2008 "Heroes of the Environment" list.

In 2011, Shellenberger and Nordhaus started the *Breakthrough Journal*, which *The New Republic* called "among the most complete answers" to the question of how to modernize liberal thought. That year, they edited the eBook *Love Your Monsters: Postenvironmentalism and the Anthropocene*, a collection of essays by leading environmentalists that postulates a future vision for the Anthropocene, the age of humans.

Influenced in part by the change of heart on nuclear power by Stewart Brand, as well as by their own analyses that renewables were woefully inadequate to power a world of nine billion people, Shellenberger has become an outspoken champion of next generation nuclear energy. As he came to realize that so much of what he had been told about nuclear was not true, it led him to question not only nuclear, but a whole host of other assumptions that the environmental movement has held dear.

Shellenberger and Nordhaus continue to be among the most innovative and influential thinkers on pragmatic ways to approach climate and energy policy, through the activities of the Breakthrough Institute and by their writing. They have argued for “making clean energy cheap” rather than making fossil fuels expensive and have written widely in *The New York Times*, *The Wall Street Journal*, *The Los Angeles Times*, *The New Republic* and *The American Prospect*.

GWYNETH CRAVENS – The Novelist

Gwyneth Cravens is a novelist, journalist and magazine editor. Her highly-regarded novels cross genres, and include *The Black Death* (1977, co-written with John S. Marr); *Speed of Light: The Adventures of Ella Speed* (1980); *Love and Work* (1982); *Heart's Desire* (1986); and, *The Gates of Paradise* (1990). Her fiction and non-fiction have appeared in *The New Yorker*, where as a fiction editor she edited legendary writers like Milan Kundera and Susan Sontag. During her time at *The New Yorker*, her colleague and close friend Bill McKibben was the first person to educate Cravens about the seriousness of climate change. Her work has also been published in *Harper's Magazine*, *The New York Times*, *The Washington Post*, *The Nation* and many other publications.

Cravens, staunchly anti-nuclear, protested the opening of the Shoreham nuclear plant in Long Island. For years she had been friends with Marcia Fernandez and her husband Dr. D. Richard “Rip” Anderson, an organic chemist and chemical oceanographer who led four large projects at Sandia National Laboratories. He spoke little about his work. One day he happened to mention during a casual conversation that nuclear power was safer and cleaner than any other form of large-scale electricity production. She disagreed. Their subsequent conversations about nuclear energy, along with journeys with him and his wife to visit nuclear facilities, her voluminous scientific research, and her skills as a novelist for compelling storytelling formed the basis of her acclaimed 464-page book, *Power to Save the World: The Truth About Nuclear Energy* (2007). Since its publication, Cravens has become a highly regarded proponent of nuclear energy as a means to help solve the climate crisis, lecturing either alone or with Anderson to members of technical and academic communities around the U.S. and abroad.

Cravens is married to best-selling humor writer (and *National Lampoon* co-founder) Henry Beard.

RICHARD RHODES – The Nuclear Weapons Expert

Richard Rhodes is the author or editor of twenty-four books including The Making of the Atomic Bomb (1986), which won a Pulitzer Prize in Nonfiction, a National Book Award and a National Book Critics Circle Award. This epic book tells the history of nuclear physics and the men and women who developed the ultimate weapon, from the Manhattan Project to the bombings of Hiroshima and Nagasaki. The book is considered both by historians and nuclear scientists from the era as the authoritative text on the dawn of the nuclear age. Rhodes' then edited The Los Alamos Primer (1992), a series of previously classified lectures which were given to recently arrived scientists at the secret Los Alamos laboratory, to bring them up to speed with the program.

As a journalist in the 1970's, Rhodes wrote many scathing articles in national magazines arguing against nuclear power. But he changed his mind after getting to know the scientists and engineers who developed this technology and gaining a clearer understanding of its potential with respect to other sources of energy. In 1993, he wrote Nuclear Renewal: Common Sense About Energy, in which he tells the troubled history of the nuclear power industry in the United States, in contrast to its development in both France and Japan. It elaborates on how and why the public has incorrectly confused nuclear energy with nuclear bombs. In the book, he makes the case for the support of nuclear power as the "cleanest and safest significant form of energy available." He went on to write three other books on nuclear weapons including Dark Sun, which was shortlisted for a Pulitzer Prize in History and told the story of the atomic espionage during World War II; Arsenals of Folly, about the policies and paranoia of the Cold War arms buildup leading up to the failed Reykjavik summit where Reagan and Gorbachev tried to negotiate the elimination of their nuclear arsenals (2007); and, The Twilight of the Bombs (2010), which assesses the threat of nuclear terrorism and imagines what a post-nuclear world might look like. This extraordinary body of work has made him one of the world's most respected authorities on the history of the nuclear age.

Rhodes has also written novels as well as books on a wide variety of topics, including: A Hole in the World (1990), a personal memoir; Why They Kill (1999), an investigation into the roots of private violence; Masters of Death (2002), about the SS murder squads of the Holocaust; John James Audubon (2004), a biography of the famed American artist and naturalist; and most recently, Hedy's Folly (2011), a biography of Hollywood star Hedy Lamarr.

Rhodes has received numerous fellowships for research and writing, including grants from the Ford Foundation, the Guggenheim Foundation, the MacArthur Foundation Program in International Peace and Security and the Alfred P. Sloan Foundation. He has been a visiting scholar at Harvard and MIT, and a host and correspondent for documentaries on public television's *Frontline* and *American Experience* series. Rhodes is an affiliate of the Center for International Security and Cooperation at Stanford University.

PANDORA'S PROMISE

About the Nuclear Pioneers

LEONARD J. "LEN" KOCH (pronounced "Coke") is a pioneering nuclear engineer who helped to build the first nuclear power reactors. The original concept for nuclear power was conceived by Enrico Fermi and his colleagues in the 1940's; the achievement of Koch and his team was to help bring this theory into reality for the first time. In 1948, Koch joined the Argonne National Laboratory in the outskirts of Chicago, where he participated in the research and development for the Experimental Breeder Reactor One (EBR-1) as an Associate Engineer. In 1950, Koch and eight others moved to Idaho, where they built and operated the EBR-1, which in 1951, produced the world's first nuclear-generated electricity. In 1953, Koch transferred back to Chicago where he played a critical role in developing the follow-up reactor, EBR-II, an advanced sodium-cooled liquid metal breeder reactor that became the test bed for the Integral Fast Reactor (IFR). Koch was made the Project Manager for the design and construction of this machine, which operated for thirty years. During this time Koch commuted between his base in the Chicago office of the ANL, and Idaho, where the EBR-II was built. This extraordinary reactor was affectionately known at Argonne as "The Koch Machine." Koch wrote a book, EBR-II, published by the American Nuclear Society that describes his experience. Koch continued his work at Argonne, which was devoted entirely to research and development of nuclear reactors for electrical power generation.

Koch received his B.S. in Mechanical Engineering from Illinois Institute of Technology and his M.B.A. from the University of Chicago. He is a member of the National Academy of Engineering and a Fellow of the American Nuclear Society. He has received two prestigious awards from the American Nuclear Society: the Walter H. Zinn Award from the Power Division in 2007, and the W. Bennett Lewis Award in 2012. In 2004, he won the Global Energy International Award from Russia, for "outstanding achievements across the world in energy research and technology." Sometimes referred to as the "Russian Nobel Prize," only four Americans have received this award.

DR. CHARLES TILL was the Director of the Reactor Development Program at the Argonne National Laboratory in Idaho from 1980 until his retirement in 1998. For ten years, from 1984 to 1994, Till was focused entirely on the development of the Integral Fast Reactor (IFR), a nuclear power plant designed to be physically incapable of suffering a meltdown, to be fueled by recycled waste from conventional reactors, to be modular in design and highly resistant to diversion for use in weapons development. Approximately two thousand engineers, scientists and supporting staff, along with the large complex of the facilities required for such research, were devoted to this initiative.

Dr. Till entered Argonne as an Assistant Physicist in 1963, and after being promoted through various supervisory ranks, he became Director of the Reactor Physics Division in 1973, supervising one hundred Ph.D level scientists and supporting staff. In 1980, he was named Director of the Argonne Reactor Development Program in its entirety.

Raised in Canada, Dr. Till studied Engineering and Physics at the University of Saskatchewan, and received his Ph.D in Engineering, with a specialty in reactor physics, at Imperial College in London. He worked at the National Research Council of Canada between 1956 and 1958, where he developed the standard device that is still in use to this day for calibration of instruments for accurate humidity measurement. He joined the Atomic Energy Authority in the U.K. in 1959, where he was involved with physics calculations on Advanced Gas Cooled Reactors. Till worked at Canadian General Electric from 1961 to 1963, where he was in charge of the startup and startup physics measurement for the Nuclear Power Demonstration (NPD), the prototype for the very successful Canadian heavy water power reactors (CANDUs) that followed.

Till is a fellow of the American Nuclear Society, which awarded him the Walker Cisler Medal in 1994 for fast breeder reactor development, and in particular for the IFR, and was elected to the National Academy of Engineering in 1989. He is the co-author, with Yoon Il Chang, of Plentiful Energy: The Story of the Integral Fast Reactor (2011).

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PANDORA'S PROMISE

About the Filmmakers

ROBERT STONE – Director, Cinematographer, Writer and Producer

Robert Stone is a multi-award-winning, Oscar®-nominated and Emmy-nominated documentary filmmaker. Born in England in 1958, Stone grew up in both Europe and America. After graduating with a degree in history from the University of Wisconsin-Madison, he moved to New York City in 1983 determined to pursue a career in filmmaking. He gained considerable recognition for his first film, *Radio Bikini* (1987), which premiered at Sundance and was nominated for an Academy Award® for Documentary Feature. Multi-tasking as a producer, director, writer, editor and cameraman, Stone has over the last 25 years developed an esteemed international reputation for his unique and critically acclaimed feature-documentaries about American history, pop-culture, the mass media and the environment. Owen Gleiberman of *Entertainment Weekly* called Stone “the most under-celebrated great documentary filmmaker in America,” for directing “two of the most explosively insightful documentaries of the last decade.”

His best-known work includes *Guerrilla: The Taking of Patty Hearst* (2004), which premiered at Sundance and went on to become one of the most highly-acclaimed theatrical documentaries of the year. The film was followed by the documentary feature *Oswald's Ghost* (2007) for which Stone earned his second Emmy nomination for Outstanding Achievement in Non-Fiction Filmmaking. His next film, *Earth Days*, traces the emergence of the environmental movement in the United States, from its beginnings in the 1950's to the 1962 publication of Rachel Carson's incendiary bestseller *Silent Spring*, to the first Earth Day celebration in 1970 and the political action that followed it. *Earth Days* premiered as the Closing Night Film at the 2009 Sundance Film Festival and was released theatrically to wide critical acclaim. Stone continues to create personally crafted documentary films from his home in the Hudson Valley of New York, where he lives with his wife and their two sons.

DON KLESZY – Editor

Don Kleszy studied Music and Experimental Film at Vassar College. A pianist by training, he became involved in the Boston music scene, writing and playing with the local punk funk band *Sons of Sappho*. He began his film career there, directing, shooting, and editing verité style music videos for *Treat Her Right*, and later, the cult phenomenon *Morphine*. His video *Thursday*, a bleached film journey through adulterous paranoia with live analog effects, was awarded best video at the 1994 Boston Music Awards. He eventually moved to New York City, where he worked first as an online effects editor, and more recently, as a commercial editor and animation supervisor. His clientele has run the gamut from Nam Jun Paik to M&M's candy. Since 2003 he has been editing feature-documentaries for Robert Stone, including *Guerrilla: The Taking of Patty Hearst* and *Oswald's Ghost* (for which he is credited as co-editor with Robert Stone), and *Earth Days*.

GARY LIONELLI – Composer

Gary Lionelli received a 2008 Emmy Award for his score for HBO's *The Ghosts of Flatbush*, and most recently for his score for the HBO documentary *Ted Williams*. He recently finished scoring HBO's new dramatic television series *Luck*, directed by Michael Mann and David Milch, and starring Dustin Hoffman. Among the films and feature-length documentaries he has scored are *The Medallion*, *Least Among Saints*, and *Guerrilla: The Taking Of Patty Hearst*.

COLL ANDERSON – Sound Designer

Coll Anderson has been working for 24 years sharpening the focus and story of films through the creative use of sound. His work includes recording, editing, designing and mixing, and spans indie art house classics to award-winning documentaries and features. Anderson's credits include: Steve Buscemi's acclaimed *Trees Lounge*, Sean Durkin's *Martha Marcy May Marlene*, Errol Morris' Oscar®-winning *The Fog of War*, and Sundance Grand Jury Prize winners *Frat House*, *Manda Bala* and *Restrepo*.

HOWARD SHACK – Co-Cinematographer with Robert Stone

Howard Shack has been the eye behind a host of award-winning documentaries for both television and the cinema. His past work for Robert Stone includes *Guerrilla: The Taking of Patty Hearst*, *Oswald's Ghost* and *Earth Days*. His other films include *Who Killed the Electric Car?*, *Sentenced Home* and *Scout's Honor*. Shack has also travelled the world filming episodes of *National Geographic Explorer* as well as *Nature* and *Frontline* on PBS.

JIM SWARTZ – Producer

Jim Swartz is a Partner and Founder of Accel Partners, a prominent global technology venture capital firm with offices in Palo Alto, London, Bangalore, Beijing and Shanghai. Active in venture capital for over four decades, he has served as a Director for over fifty successful companies and has been closely involved as lead investor with the emergence of numerous industry pioneering technology companies. He is a graduate of Harvard University with a concentration in Engineering Sciences and Applied Physics and holds a M.S. in Industrial Administration from Carnegie Mellon University, where he sponsors the James R. Swartz Entrepreneurial Fellowship Program and the Swartz Leadership Scholarship.

He is Chairman of the Swartz Foundation and the Christian Center of Park City, Director Emeritus of the U.S. Ski and Snowboard Foundation (where he established the Borgen-Swartz Education Endowment), Trustee of the Sundance Institute and the San Francisco Museum of Modern Art and a member of the Board of Advisors of Tepper School of Business and Pacific Community Ventures. Mr. Swartz also led the establishment of the Deer Valley Music Festival as a Founder and the YMCA of Martha's Vineyard as Co-Chairman of the Major Gifts Committee. From 1999 to 2002, he served on the Management Committee of the Salt Lake Organizing Committee for the Winter Olympics of 2002 (SLOC). He is the recipient of a Merit Award from Carnegie Mellon University and an Honorary Doctorate Degree from the Western Governors University.

Together with his wife Susan, Mr. Swartz also founded Impact Partners, a financing and advisory firm advancing independent cinema that addresses pressing social needs including Academy Award®-winner *The Cove* (2010) and numerous Academy Award® nominees and Sundance award winners, and also co-produced the Academy Award®-winning documentary *Born into Brothels*.

SUSAN L. SWARTZ – Producer

Susan Swartz is a professional painter with a love for the natural world. She was the Environmental Artist for the 2002 Olympic Winter Games and published in a collector's book *Painters of the Wasatch Mountains*. In 2007 she published her own award-winning book *Natural Revelations*, in 2008 she had her first solo museum exhibition at the Utah Museum of Fine Arts, and in 2011 her first solo national museum exhibition at the National Museum for Women in the Arts.

Ms. Swartz is actively involved in the production of documentary films that seek to shed light on injustice. She co-produced the 2005 Academy Award winning documentary *Born into Brothels* and co-executive produced the short documentary *The Cove: Mercury Rising*. In addition to being the guiding force for the formation of Impact Partners, Ms. Swartz has participated in the production of dozens of award winning documentary films with Impact Partners. She serves on the Board of Trustees of the Fine Arts Museums of San Francisco/de Young and Legion of Honor, the Salt Lake Film Center and the Harvard Divinity School, and is Co-Chair of the Park City Christian Center.

DAN COGAN – Executive Producer

Dan Cogan is the Executive Director and Co-Founder of Impact Partners, a fund and advisory service for investors and philanthropists who seek to promote social change through film. Since its inception in 2007, Impact Partners has been involved in the financing of over 35 films, including: *The Cove*, which won the 2010 Academy Award® for Best Documentary Feature; *Freeheld*, which won the 2008 Academy Award® for Best Documentary Short Film; *The Garden*, which was nominated for an Academy Award® for Documentary Feature in 2009; *Hell and Back Again*, which won the Documentary Grand Jury Prize and Cinematography Award at the 2011 Sundance Film Festival, and was nominated for an Academy Award® for Documentary Feature in 2012; and *How to Survive a Plague*, which was nominated for an Academy Award® for Documentary Feature in 2013. Mr. Cogan has spoken on documentary film and film finance at film festivals, conferences and classes around the world, including The Sundance Film Festival, The Toronto Film Festival, Silverdocs, Hot Docs, The Tribeca Film Festival, the IFP's Independent Film Week, Film Independent's Filmmaker Forum, and Columbia University. Mr. Cogan received his B.A. from Harvard University, Magna Cum Laude, and attended the Film Division at Columbia University's Graduate School of the Arts.

PAUL G. ALLEN – Executive Producer

Paul G. Allen is a technologist who started Microsoft with Bill Gates, a childhood friend, in 1975. He is also founder and chairman of Vulcan Inc., the company that oversees his business and philanthropic efforts. His multibillion-dollar investment portfolio includes a major real estate redevelopment in Seattle's South Lake Union neighborhood, professional sports teams and holdings in dozens of media and technology companies. In 2011, Mr. Allen founded Stratolaunch Systems, which is developing an innovative airborne launch system.

Mr. Allen, who has pledged to leave a majority of his estate to philanthropy, gives back to the community through the Paul G. Allen Family Foundation as well as with direct gifts. In 2003, he created the Allen Institute for Brain Science to accelerate understanding of the human brain in health and disease. With a commitment of \$500 million to date, Mr. Allen supports the Seattle-based nonprofit's large-scale research initiatives that fuel discovery throughout the scientific community.

His independent film company, Vulcan Productions, has won numerous awards for feature films and documentaries. *Idea Man*, Mr. Allen's 2011 memoir, was a *New York Times* bestseller.

Mr. Allen is also founder of Seattle's critically acclaimed EMP Museum; the Flying Heritage Collection, an assemblage of World War II aircraft; and the Living Computer Museum, a collection of restored vintage computers. Learn more at www.paulallen.com.

JODY ALLEN – Executive Producer

Jody Allen is president and CEO of Vulcan Inc., the project and investment management firm she co-founded with investor and philanthropist Paul G. Allen in 1986. Since then, she has developed and led a wide range of Mr. Allen's business and charitable endeavors around the world.

Ms. Allen serves as president of Vulcan Productions, which produces compelling films, innovative digital programs, and outreach initiatives. Ms. Allen co-produced the PBS series *Martin Scorsese Presents The Blues*, as well as the independent feature films, *Far from Heaven* and *Hard Candy*.

In addition, Ms. Allen is co-founder and president of the Paul G. Allen Family Foundation, which builds strong communities and supports vulnerable populations around the Pacific Northwest. She is president of the board of Seattle's EMP Museum, the critically-acclaimed museum of music, popular culture and science fiction, and vice-chair of First & Goal Inc., which oversees operations of the Seattle Seahawks. She also serves on the boards of the Allen Institute for Brain Science and the Seahawks Charitable Foundation.

An active member of the arts and education communities, Ms. Allen has served on the boards of ArtsFund, the Theatre Communications Group, the University of Washington

Foundation, the Museum of Glass, the Los Angeles International Film Festival and the Oregon Shakespeare Festival.

DR. BURTON RICHTER – Senior Science Advisor

Burton Richter is the Paul Pigott Professor in the Physical Sciences Emeritus at Stanford University and Director Emeritus of the SLAC National Accelerator Laboratory. He is currently a Senior Fellow at Stanford's Freeman Spogli Institute of International Studies, the Precourt Institute for Energy and the Woods Environmental Institute.

Dr. Richter's honors and awards include the 1976 Nobel Prize in Physics, the E. O. Lawrence Medal of the U. S. Department of Energy, the 2007 Phillip Hauge Abelson Prize by the AAAS, and the 2011 Fermi Award, a Presidential award for lifetime achievement. He is an elected a member of the National Academy of Sciences; the American Academy of Arts and Sciences; the American Philosophical Society; Fellow and President (1994) of the American Physical Society; Fellow of the American Association for the Advancement of Science (AAAS), and Past President of the International Union of Pure and Applied Physics.

Dr. Richter received his B.S. and Ph.D. degrees from the Massachusetts Institute of Technology. He began his career at Stanford in 1956 as a Research Associate in the High-Energy Physics Laboratory. He became a full professor in 1967 and was given an endowed Chair in 1980. He became Director of the Stanford Linear Accelerator Center as it was known then in 1984 and served in that position until 1999. He retired from the University faculty in 2006.

Before becoming SLAC Director his research focused on development of electron-positron colliding-beam systems and the research done with them. As SLAC Director he oversaw the transformation of the laboratory from a single-purpose High-Energy Physics lab to a multiprogram laboratory in HEP, synchrotron-radiation based photon science, and space-based astro-particle physics.

After stepping down as Director at SLAC he has focused on energy and climate issues, writing articles and his recent book, Beyond Smoke and Mirrors: Climate and Energy in the 21st Century, winner of the 2011 Phi Beta Kappa Science Book of the Year award.

He is a member of the DOE's Nuclear Energy Advisory Board and chairs its Fuel Cycle subcommittee; the DOE's Energy Efficiency and Renewable Energy Advisory Committee; and the Board of Directors, Litel Instruments. Richter has been a member of the Secretary of Energy's Advisory Board; Advisory Committee of the Massachusetts Institute of Technology Lincoln Laboratory; member of the Board of Directors, Varian Associates and Varian Medical Systems; member of the Director's Council, Scripps Institution of Oceanography; member of the International Committee for Future Accelerators; and chair of the U.S. Liaison Committee for the International Union of Pure and Applied Physics. He has over 300 publications in high energy physics, accelerators, and colliding beam systems.

PANDORA'S PROMISE was independently produced, and all editorial decisions lay exclusively with filmmaker Robert Stone.

It is of paramount importance to the filmmakers that the independence of the film is known, and that the funding of the film is transparent. Below is a list of all the funders of the film.

Paul G. Allen
Jody Allen
Aimee & Frank Batten
Ross Koningstein
Ray Rothrock
Peter Wagner

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