



# HEAVEN + EARTH + JOE DAVIS

A feature documentary  
by Peter Sasowsky

## -SYNOPSIS-

Almost thirty years ago, a peg-legged artist and motorcycle mechanic from Mississippi walked into MIT's Center for Advanced Visual Studies and demanded a meeting with the Director. They had not returned his calls.

Forty-five minutes later, after trashing the receptionist's desk and holding off the Cambridge police, Joe Davis walked out of Director Otto Piene's office with an academic appointment at MIT.

Over the years his status there has provided him with resources and collaborators for the creation and planning of much of his work - work that includes sending vaginal contractions into space to communicate with aliens; fishing for paramecia; encoding Greek poetry into the DNA of white-eyed flies; building an airplane powered by frog's legs; and developing a language to write the world beneath the world.

It's a great life for a man driven by his own imagination, except that Joe has other things to deal with. His position at MIT is unpaid; he gets evicted from several apartments and keeps losing his lab space to science; his sister encourages him to try to market or patent his ideas so he can make money and live an easier life. But to do that he would have to stop, and Joe Davis does not want to stop.

But perhaps his greatest obstacle is that people refuse to understand him. He is claimed by neither the Art nor Scientific communities. His uncompromising approach to art and life spawns conflicts in his personal life and hinders his ability to address the everyday world's banal requirements. But then, when you're trying to discover man's place in the cosmos, it's no surprise that other considerations seem small in comparison. Including recognition.

Working with home movies, drawings from Joe's notebooks, and vérité and interview footage, Heaven + Earth + Joe Davis takes the viewer with Joe around the world and into the visual and philosophical landscape of his art. It is a story of self-discovery, sacrifice, and the complexity of human endeavor, constructed around a theme central to his work; that everything is connected, often in the most unexpected ways.



# HEAVEN EARTH JOE DAVIS

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-SHORT SYNOPSIS-

Thirty years ago, a peg-legged motorcycle mechanic walked into the Center for Advanced Visual Studies at MIT. They had not returned his calls. The police were summoned. Forty-five minutes later he walked out with an academic appointment. Since then Joe Davis has sent vaginal contractions into space to communicate with aliens, encoded poetry into DNA, and designed a sculpture to save the world. It's a great life for a man driven by imagination – except when it's not. No one pays him. He is evicted from apartments and labs. His uncompromising approach to art and life collides with the world's banal requirements. This is a story of self-discovery, sacrifice and the complexity of human endeavor, of the price of art and the ecstatic joy of discovery.



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## -DIRECTOR'S STATEMENT-

I am drawn to stories that take a wide view of human experience, especially when they derive from small and personal places.

When I first saw Joe Davis in a bar in Cambridge, Massachusetts, he was twirling on his peg-leg, giving a young woman the dance of her life. He fell hard to the ground and got up smiling. At the time I did not know – and would likely not have believed – what he does. There was simply some spirit there that I was drawn to.

In the years that followed, I travelled with him throughout the world immersing myself for stretches of time in his life and work, which are inextricably intertwined. The film that has emerged is an intensely personal portrait, yet one that deals with universal questions of real consequence.

There is a Renaissance quality to his story, both for the interdisciplinary nature of his pursuits and for the sense of possibility he embodies. It is representative of a time when knowledge wells up in advance of some great move forward in human understanding. That kind of excitement is contagious, and I also think somewhat rare.

Though it is by no means the entirety of his endeavors, Joe's work in bio-art is perhaps his most poetic and significant. Our comprehension of the genetic code and the ability to intervene in its design are just beginning to have what will be a profound effect on how we view ourselves. There is a great need to hear voices on this subject that are not polarized toward commercial or political ends.

I believe that the best art reshapes our perception of the world. The artists who offer the greatest leaps of imagination are – almost by definition – least understood, at least in their lifetimes. It's not for me to say whether or not Joe is one of these pioneers, but I do know that he is uniquely qualified to raise questions that can only be answered where art and science intersect.



# HEAVEN EARTH JOE DAVIS

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-CREW-



**Peter Sasowsky (Producer/Director)** has been producing and directing film and video projects in New York City and around the world for over a decade. He is the founder and director of Serious Motion Pictures, a script to screen production company that produces documentary and narrative films, corporate communications and educational media.



**Amy Grumbling (Co-Producer)** is a freelance producer and editor. She's currently producing and co-directing a documentary about the experiences of two photojournalists assigned to Ground Zero on 9/11/01. She recently travelled to Haiti shooting and editing a documentary about post-catastrophe reconstruction. She was Associate Producer for Celia Maysles' feature documentary "Wild Blue Yonder," and worked as an Associate Programmer at UnionDocs, a non-profit documentary venue in Brooklyn. Amy volunteers at 826NYC, helping students write and shoot short films.

#### *Credits:*

*Director – Peter Sasowsky*

*Produced by – Peter Sasowsky*

*Co-Producer – Amy Grumbling*

*Director of Photography – Peter Sasowsky*

*Additional Photography – Cecile Bouchier / Andrew Neumann / Stephen Baumgardner*

*Editing – Peter Sasowsky*

*Additional Editing – Brett Nicoletti / Jay Miracle / Charlene Rule*

*Soundtrack – Do.Make.Say.Think*

*Additional music – Tom Martin / Tom Phillips / OBT Music*

*Sound Mix: Pete Romano*

*Colorist + Online Editor: Patrick Inhofer, Fini.TV*

*Music Rights: Brooke Wentz, The Rights Workshop*

*Legal Services: Karen Schatzkin, Schatzkin & Mayer*



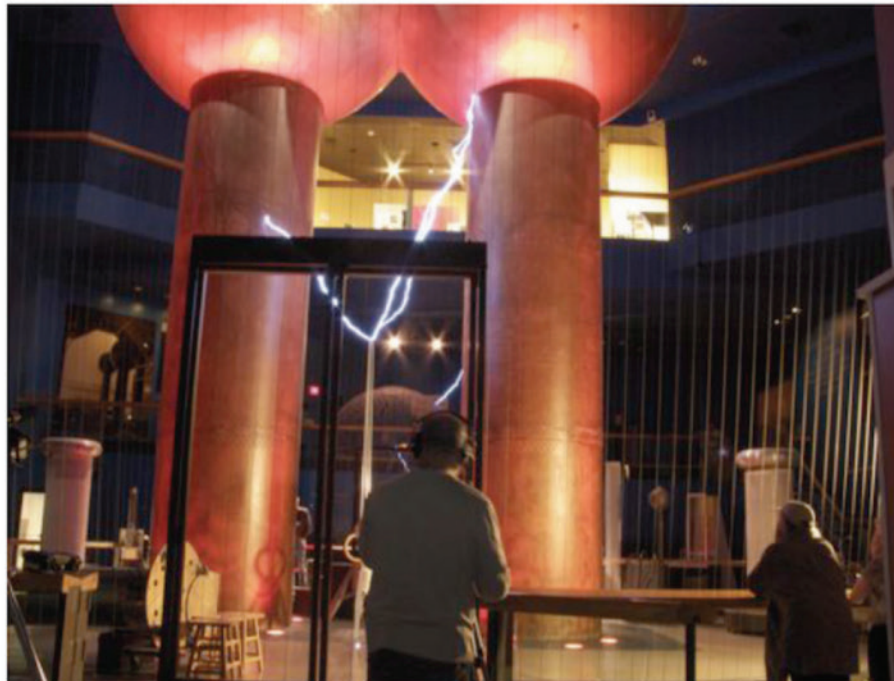
# HEAVEN EARTH JOE DAVIS

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-PRODUCTION STILLS -

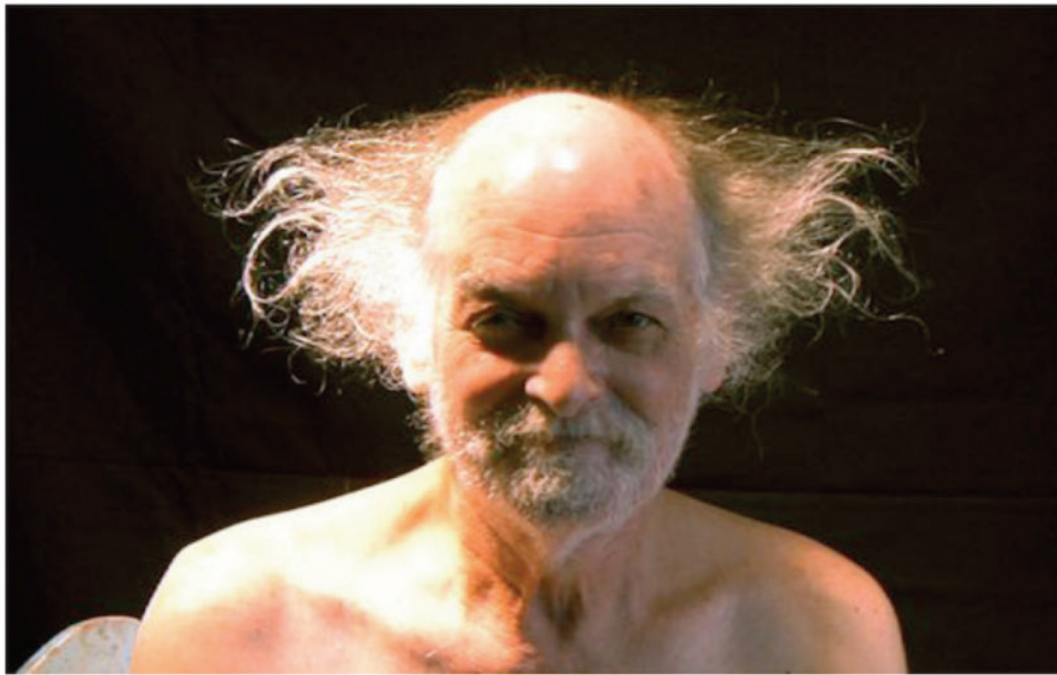


*Joe Davis at NASA's Stennis Space Center in Mississippi.*



*Joe Davis tests a model for his project, "Call Me Ishmael" at the Van de Graaff generator at the Museum of Science, Boston, Massachusetts.*

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*Joe Davis poses for painter Michael Costello at his studio in Cambridge, Massachusetts.*



*Joe Davis returns to Mississippi after Hurricane Katrina, a trip that served as the inspiration for his project, "Call Me Ishmael".*

# THE BOSTON PHOENIX

## Review: Heaven + Earth + Joe Davis

Cambridge's own eccentric trash-spelunker  
by CHRIS FARAONE

Wednesday, April 27, 2011



Joe Davis is the type of character who begs to be profiled. So director Peter Sasowsky answered the call, and for years he followed Cambridge's own eccentric trash-spelunking bacteria whisperer around Greater Boston and the world, probing his chronically misunderstood imagination. Although at moments the film hints that the peg-legged Davis is a crackpot, it's ultimately clear that the former MIT and current Harvard lecturer is hardly a mad scientist. Davis is sometimes called the "Grandfather of Genetic Art," and now his work connecting natural curiosities with established scientific tenets is finally earning some acclaim, thanks to a surge in the popularity of biological art. *Heaven + Earth + Joe Davis* describes such a convincing arc that you almost wonder whether Sasowsky didn't know how the story would unfold from the beginning. Perhaps you can ask Davis at the Plough and Stars, where he's known to hug the bar and even does the dishes every Sunday night.



BU's independent online magazine

# the quad

## IFFBoston Preview: New England's Finest Festival Gears Up For Another Year

by DAVID BRAGA

Tuesday, April 26, 2011

### *Heaven + Earth + Joe Davis*

Less a standard documentary than a character piece about someone who just happens to be real, *Heaven + Earth + Joe Davis* is a strange, sometimes funny, sometimes somber and always engaging picture. It doesn't follow a story or make an argument, but instead simply follows Joe Davis, a peg-legged (you read that right) Cambridge local who has spent his life creating bio-art. His creations are sometimes amusing (a plane powered by frog legs), while at other times go completely over most viewers heads (encoding artwork into bacterial genomes). But we watch all the same because Davis is some sort of human attention magnet. Even if we don't understand what he's talking about we are enthralled because of how firmly he seems to believe it. We also see the divide between how he wants us to see him and the harder realities of his life as it actually is, tainted by failed relationships and other issues. Davis may be as frustrating as he is brilliant, but either way he's very hard to look away from.

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# NewEnglandFilm.com

New Englanders Hit the Screen at the IFFBoston

We get the scoop on five films from New England talent that will screen at the Independent Film Festival Boston, which starts April 27th.

by B. WALTER IRVINE

Thursday, March 31, 2011

With *Heaven + Earth + Joe Davis*, Massachusetts filmmaker Peter Sasowsky examines Davis, who has been associated with MIT for many years, doing art projects that resemble mad science: sending signals derived from vaginal contractions into space; making small aircraft powered by frog legs; and encoding messages in the DNA of *E. coli*, among other colorful projects.

Sasowsky wanted the film to introduce Davis as he had been introduced to him, when he ran into the artist and visionary years ago at the Plough & Stars, a popular bar in Cambridge. "I was interested in recreating the experience people have when they meet Joe ... I started asking questions like, 'Do these projects really work? Is it really real?' But then I arrived at a place where I realized it's not the right question."

In the "constant battle between commerce and art," Sasowsky said, Davis stands out for his disinterest in the quotidian or commercial. "He's beholden almost exclusively to his imagination," said Sasowsky, while he neglects the more prosaic problems of health care and housing. He is often forced out of his living or work space, and he had a difficult time getting funding over the long period the movie was shot. (Since the end of filming, Sasowsky explained, Davis has found better working space and funding.)

Perhaps this is the price one pays to realize the message that Sasowsky sees in Davis and his work: "Everything is connected in ways we may not imagine."



**CAMDEN FILM FESTIVAL: "THE WAY A FEST SHOULD BE"**

Tuesday, October 5th, 2010

HEAVEN + EARTH + JOE DAVIS

Every year we say the character doc is dead and every year someone proves us wrong. Even though it is still in progress, Peter Sasowsky's playful yet poignant look at a truly different thinker could easily stand with 2010 favorites *AMERICAN: THE BILL HICKS STORY* and *SMASH HIS CAMERA* in its finished form. Joe Davis is a humorous and brilliant iconoclast; an unapologetic Falstaff who lights up the screen and invigorates the mind. Working as a biological artist, he uses his gift of free thought to inspire new and fascinating ways of looking at the universe in hopes of creating radical new paths for science and the human experience. I commend Camden for giving developing films a stage to propel them to completion, but I am particularly impressed with their providing a first look at what I am sure will be one of the hits of next year's documentary scene.

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# SCIENTIFIC AMERICAN™

## Art as a Form of Life

Genetic artist Joe Davis has made more copies of his work than have all prior artists combined. But there's not much of a market for artworks embedded in bacterial genomes By W. WAYT GIBBS

**CAMBRIDGE, MASS.**—Either Joe Davis is late or I am lost. For the third time, I check the address: Massachusetts Institute of Technology, building 68, room 604D. Here it is, locked and looking nothing like a studio for avant-garde art. “SEVERE EYE DAMAGE,” cautions a sign on the door, referring to a laser (not the artworks) inside. There are waste bins marked “WARNING: RADIOACT-

IVE WASTE,” walk-in refrigerated vaults containing cells in stasis, ultracentrifuges the size of washing machines, but no paints, no cameras, no sculpting tools.

I wander downstairs to the office of Alexander Rich, the biophysicist who famously discovered left-handed DNA (the normal stuff twists to the right), who worked out the structure of transfer RNA, and who invited Davis into his laboratory in 1992 as a “research affiliate,” which grants Davis a space to work and access to the lab’s expensive tools but no financial support. There is still no sign of Davis, until I press my nose against the window of a door to a small white room.

The room is warm: 98.6 degrees Fahrenheit. There, on wire shelves next to flasks in which swim various strains of human gastrointestinal bacteria, sit five mason jars. Each jar is labeled “SELF-ASSEMBLING CLOCK” and holds the jumbled parts of a disassembled timepiece. I recognize this as Davis’s work, part of his six-year-old “experiment” to see whether, given the right conditions and enough time, the components of machines can self-assemble into working devices, just as life supposedly arose spontaneously from random collisions of precursory biochemicals billions of years ago. That theory suddenly strikes me as less plausible and yet more profound.

I hear a ticking sound and turn to see Davis walking down the hall, his self-made peg leg clacking, steel on tile. The test-tube stopper plugging its end has worn down. Ask him how he lost the limb, as someone does at his 50th birthday party the following night, and he raises an eyebrow, inhales deeply and recites one of his poems, a dark, frightening, erotic poem of slithering asps, black waters and an embrace with the long, luscious lips of an alligator.

Ask his friends, however, and they say he lost the leg in a motorcycle crash some 20 years ago, when he was still a sculptor and bike mechanic in Mississippi. That is where he was reared until problems at school got him sent up to the grandparents in Delaware and to a psychiatric evaluation at age 13. In his report, Dr. J. F. Jas-



### JOEDAVIS: GENESTHETICIST


- Expelled from three high schools and two colleges, for writing about atheism, refusing a haircut, making an ethanol still (which exploded) and being elected student body president on a “free marijuana” platform
- Walked into M.I.T. uninvited in 1982; secretary called the cops; 45 minutes later, Davis walked out with a stipend-paying position
- Engineered bacteria that contain in their DNA an encoded Microvenus symbol: 

PHOTO CREDIT HERE

## Profile

tak suggested that Joe should “apply his artistic abilities to his scientific ventures,” maybe even pursue a career as a scientific artist. A prescient forecast for 1964, although Jastak probably imagined Davis



drawing pictures of atomic airplanes.

Davis himself had altogether different ideas about commingling science and art, ideas that have often made both professions uncomfortable. He championed a space shuttle experiment that would have pumped 100,000 watts from an electron gun into the upper atmosphere to create the first artificial aurora (the National Aeronautics and Space Administration accepted the project, but the *Challenger* accident intervened). He led a quasicover operation that translated vaginal contractions, the impetus of human conception, into text, music, phonetic speech and ultimately into radio signals beamed from M.I.T.'s Millstone radar to several nearby star systems (the air force shut down transmissions after 20 minutes). He drew up plans for channeling a lightning bolt into a laser powerful enough to create visible spots on the moon (an idea still awaiting a sponsor). And then, about 15 years

ago, Davis realized that genetic engineering offered a rich new medium for art—life itself. He convinced molecular biologists at Harvard University and the University of California at Berkeley to

teach him how to synthesize DNA and insert it into the genomes of living microorganisms, then set about creating what he calls “an infogene, a gene to be translated by the machinery of human beings into meaning and not by the machinery of cells into protein.” His idea was to create a message in a bottle for extraterrestrials: to genetically engineer a sign of human intelligence into the genome of bacteria, which could then be grown by the ton and flung out across the heavens.

For his bottle, Davis chose *E. coli*, a bacterium of the human gut that might

**AXE EXPECTS THIS** from Tiffaxy, whex it ta pearls is that pite the



well survive for aeons in deep space. For his message, he selected *Microvenus*, a simple symbol—like a Y and an I superimposed—that is both a Germanic rune representing life and an outline of the external female genitalia, which was censored from the pictures of humans on the Pioneer and Voyager space probes.

Digitized and translated into a string of 28 DNA nucleotides, *Microvenus* first

slipped between the genes of *E. coli* in 1986. The bacteria quickly multiplied in its beakers into trillions of cells. “I’m probably the most successful publisher in history,” Davis says with a laugh.

Without a doubt, *Microvenus* was the most highly reproduced graphic that almost no one had ever seen—until last September, when the icon, explanations of the encoding, and cultures of the transgenic bacteria itself were finally put on public display in a biological containment facility erected at the Ars Electronica exhibition in Linz, Austria. For the first time, Davis showed off some of his other biological artworks. There was synthetic DNA containing a coded text message—“I am the riddle of life; know me and you will know yourself”—and an audio microscope he built from borrowed lasers, optics and stereo equipment so that visitors could eavesdrop on the lives of single-celled animals.

And in a keynote lecture, he described his current artwork, the most ambitious yet: the genetic insertion of an image of the Milky Way into a mouse’s ear, an idea inspired by a children’s story written 30 years ago by a girlfriend. To encode such a large amount of binary information in DNA, he spent years figuring out a general method for archiving computer databases in biological form, a “supercode” that guarantees the infogene will be biochemically stable and yet prevents the host from translating it into protein. Despite his professional recognition, Davis remains utterly dependent on donations of equipment and expertise from scientists. “Fortunately, Joe’s always been a good Tom Sawyer of people,” observes David Gessel, an engineer with Nebucon who has aided Davis on several projects. “It helps that he is consistently rigorous in his intellectual approach” and that he isn’t in it for money. Indeed, because he sells his conventional sculptures to friends at cost and cannot sell his transgenic art at all, even now Davis skirts homelessness, with no fixed address and many of his belongings jammed into a decrepit Volvo he obtained in trade for a self-assembling clock.

## OverMatter

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As I leave Davis, smoking in the cold, I walk past the M.I.T. Media Lab, where so many millions of corporate dollars have chased so many questionable and abortive attempts to weave technology into a cultural fabric. And I cannot help but think it perverse that the same society offers so little support for art that does not merely comment passively on the transformations and ethical dilemmas that science forces on society but that actively enacts and illustrates them, co-opting the tools and media of science itself.

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*See [www.sciam.com/profile/xxxx/xx](http://www.sciam.com/profile/xxxx/xx) for an enhanced version of this Profile, including samples and technical details of Davis's work.*

- **"Scientists are increasingly skittish about getting too close to me for fear of the wrong kind of publicity."**