

CFI Calls on FDA to Label Homeopathic Drugs as Untested and Unproven

Consumers spend \$3 billion a year on homeopathic drugs, yet most remain unaware that the Food and Drug Administration (FDA) has not evaluated them for safety and effectiveness. In comments filed with the FDA the week of August 17, the Center for Inquiry (CFI) urged the FDA to subject homeopathic drugs to the same testing requirements as conventional drugs. Failing that, CFI urged the FDA to at least require homeopathic products to be clearly labeled as untested and unproven.

Homeopathy is a centuries-old pseudoscience, developed before the discovery of disease-causing pathogens, based on the false beliefs that “like cures like” and that the more an ingredient is diluted the more potent it is, due to water’s “memory” of the diluted ingredient. As CFI stated in its comments, “By its own definition, homeopathy cannot work.” Yet for historical reasons relating to the passage of the original Food, Drug, and Cosmetic Act in 1938 (which had a homeopathic practitioner as a key sponsor), homeopathic products can be marketed even though they are not subject to the rigorous testing for safety and effectiveness that conventional drugs must undergo.

In late March, the FDA announced it was reconsidering its position on homeopathic drugs. The Center for Inquiry, which advocates for science and reason and is home to the Committee for Skeptical Inquiry, had previously petitioned the FDA to address the inadequate regulation of homeopathic products. It was then invited by the FDA to provide testimony at public hearings on the subject in April (SI, July/August 2015).

Said Ronald A. Lindsay, president and CEO of CFI:

When people get sick or hurt, they are confronted with countless products that claim to be able to make them better. They cannot be blamed



for not distinguishing between effective remedies and pseudoscience from the 1700s if both products share the same store shelves, and there is no labeling on homeopathic drugs to indicate they are given a pass by the FDA. Clear labeling on homeopathic products, that catches consumers’ attention and informs them that the FDA does not evaluate these products for safety or effectiveness, is an easy way to ensure that people looking to treat their illnesses are not fooled into thinking that homeopathic drugs are real medicine. Study after study demonstrates that at most they have a placebo effect.

“We believe that true freedom of choice is impossible unless one is fully informed about the choices,” writes CFI in its comments. “The public needs the guidance of an expert agency when it comes to buying drugs as they are not in a position to evaluate their effectiveness themselves, without incurring unacceptable risks.”

One such risk highlighted by CFI is the risk of those suffering from real medical conditions who might rely on homeopathic products to the exclusion of proven scientific remedies, which

Homeopathy is a centuries-old pseudoscience, developed before the discovery of disease-causing pathogens.

can result in people becoming sicker or even dying for lack of real, scientifically proven treatments.

In the meantime, the Federal Trade Commission (FTC) responded to the FDA’s requests for public input with its own criticism of the FDA’s slack regulatory policies on homeopathy. The FTC complained, among other things, that the FDA’s policy guide “does not require that over-the-counter (OTC) homeopathic drugs be approved by FDA as safe and effective if they satisfy certain conditions, including that the product’s label contains an indication for use. Yet the policy guide does not require sellers to have competent and reliable scientific evidence to support the indication for use.”

The full comments submitted to the FDA can be read at bit.ly/CFI_Homeopathy_FDA.

Ten Distinguished Scientists and Scholars Named Fellows of Committee for Skeptical Inquiry

Ten distinguished scientists, scholars, educators, and investigators from five countries have been elected fellows of the Committee for Skeptical Inquiry (CSI), copublisher of the *SKEPTICAL INQUIRER*. CSI (formerly CSICOP) is one of the world's leading organizations for the promotion of scientific thinking and the critical examination of extraordinary claims from a scientific point of view.

Fellows of CSI are selected for their "distinguished contributions to science and skepticism." They are nominated and elected by CSI's twelve-member Executive Council.

In addition, CSI named four new Scientific and Technical Consultants.

The new fellows join a list of notable CSI fellows that includes astronomers Neil deGrasse Tyson and Jill Tarter; biologists Richard Dawkins and E.O. Wilson; Nobel laureate physicists or chemists Leon Lederman, Murray Gell-Mann, Steven Weinberg, and Sir Harry Kroto; philosophers Daniel C. Dennett, Susan Haack, and Mario Bunge; anthropologist Eugenie C. Scott; psychologists James Alcock, Ray Hyman, Steven Pinker, and Richard Wiseman; magician/author James Randi; science educator and television host Bill Nye; *Cosmos* creator/writer Ann Druyan; plus many prominent physicians and medical scientists who critique questionable medical claims.

The full list of fellows is on the inside cover of each issue of SI and on the organization's website at csicop.org/about/csi_fellows_and_staff/.

Past fellows now in CSI's Pantheon of Skeptics (http://www.csicop.org/about/the_pantheon_of_skeptics/) include Isaac Asimov, Carl Sagan, Martin Gardner, Nobel laureates Francis Crick and Glenn T. Seaborg, Stephen Jay Gould, B.F. Skinner, and philosopher and CSICOP founder Paul Kurtz.

The Committee's newly elected fellows are:

JOHN COOK, Climate Communication Research Fellow for the Global Change Institute at the University of Queensland, Australia.

KRISTA FEDERSPIEL, science journalist, expert on complementary and alternative medicine, Vienna, Austria.

JULIA GALEF, host of the *Rationally Speaking* podcast; cofounder, Center for Applied Rationality, Berkeley, CA

STEPHAN LEWANDOWSKY, psychologist, School of Experimental Psychology and Cabot Institute, University of Bristol, United Kingdom

DANIEL LOXTON, author, editor of *Junior Skeptic* at *Skeptic* magazine (US), artist, Vancouver, B.C., Canada

PAUL OFFIT, Professor of Pediatrics; Director of the Vaccine Education Center, the Children's Hospital of Philadelphia

NAOMI ORESKES, geologist and professor, Departments of the History of Science and Earth and Planetary Sciences, Harvard University, Cambridge, MA

JAMES L. POWELL, geochemist, author, professor; executive director, National Physical Science Consortium; retired college and museum president, Buellton, CA

DONALD R. PROTHERO, paleontologist/geologist, Natural History Museum of Los Angeles County, Los Angeles, CA

STUART VYSE, psychologist, former Joanne Toor Cummings '50 Professor of Psychology, Connecticut College; author of *Believing in Magic: The Psychology of Superstition*, Stonington, CT

The Committee's newly elected Scientific and Technical Consultants are:

SUSAN GERBIC, founder and leader of the Guerilla Skepticism on Wikipedia (GSoW) project, skeptic activist, photographer

GABOR HRASKO, chairman of the European Council of Skeptical Organizations (ECSO), president of Hungarian Skeptics

JOHN R. MASHEY, computer scientist/executive (Bell Labs, then Silicon Valley), analyst of climate-change denial, contributor to *DeSmogBlog* and *Skeptical Science*, Portola Valley, CA

JULIA OFFE, neurobiologist, science journalist, creator of *German Science Slam*

John Cook is the Climate Communication Fellow for the Global Change Institute at the University of Queensland, Australia. He created and maintains the *Skeptical Science* website, one of the top online sources of information about climate science and climate denialism, and is coauthor of *Climate Change Denial* (2011) and the 2013 college textbook *Climate Change Science: A Modern Synthesis*. He also was lead author of the paper "Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature," awarded the best paper published in *Environmental Research Letters* in 2013. He has a BS in physics and is currently completing a PhD in cognitive psychology, researching how people think about climate change. He and colleague Stephan Lewandowsky (also a newly elected CSI fellow) wrote "The Debunking Handbook," a guide about the problems of, and best strategies for, debunking anti-science myths.

Krista Federspiel of Vienna, Austria, is a medical journalist and author with a PhD in folklore. She worked as a freelance journalist and editor for several Austrian and German magazines and newspapers. She also became known as a radio and television presenter. She is a member of the Science Council of the Society for the Scientific Investigation of Para Sciences (GWUP, the German skeptics group) and regularly publishes articles in their magazine, *Skeptiker*. She is cofounder and an active member of the Society for Critical Thinking, the Vienna Regional Group of GWUP. Her focus is on social and women's issues, consumer protection,

medicine, and psychotherapy. Federspiel has become well known as a critic of alternative medical procedures. She is author, coauthor, or editor of a number of books in these fields.

Julia Galef is president and cofounder of the Center for Applied Rationality, a nonprofit think tank that trains people to be more rational. She is a writer, podcaster, and public speaker on rationality, science, and the philosophy of science, often explaining common confusions and popular misconceptions about rationality. She serves on the board of directors of the New York City Skeptics and hosts their official podcast, *Rationally Speaking*, which she has done since its inception in 2010, sharing the show with cohost and philosopher Massimo Pigliucci until 2015. Galef has a degree in statistics and did graduate work in economics before shifting to her present career advocating for science and rationality.

Stephan Lewandowsky is a psychologist whose recent research has focused on the public's understanding and misunderstanding of science and why people often embrace beliefs at odds with the scientific evidence. He is a cognitive psychologist in the School of Experimental Psychology at the University of Bristol, United Kingdom, where he is also part of the university's Cabot Institute. Until 2013, he was at the University of Western Australia. He has published a number of notable studies examining people's beliefs in misinformation, including one of the best-known studies of public opinion about climate change, advancing the literature on what has come to be known as "motivated reasoning." He has also studied the relationship between believing conspiracy theories and rejection of various forms of science. He is the first digital content editor for the Psychonomic Society, running its blog at <http://www.psychonomic.org/featured-content>.

Daniel Loxton is editor of the Junior Skeptic section in *Skeptical* magazine (U.S.), and a Canadian writer and artist. He is lead author (with Donald Prothero, also named a fellow) of the 2013 book *Abominable Science!*, a scientific look at cryptozoology heralded as one of the best books about the origins of myths about Yeti, Nessie, and other famous cryptids. His book *Evolution: How We and All Living Things Came to Be* won the \$10,000 Lane Anderson Award, Canada's top national award specific to children's science writing. His book *Pterosaur Trouble* won the \$5,000 Bolen Books Children's Book Prize at the Victoria Book Awards. Loxton has also become a kind of unofficial historian of the modern skeptical movement, with online papers such

as "Why Is There a Skeptical Movement?" (2014) exploring the roots, founding principles, and purposes of scientific skepticism.

Paul Offit, MD, is Professor of Pediatrics and Director of the Vaccine Education Center at the Children's Hospital of Philadelphia. He is also a professor of pediatrics and vaccinology at the University of Pennsylvania School of Medicine. Offit is co-inventor of the rotavirus vaccine, credited with saving hundreds of lives every day. He is a leading proponent for childhood immunizations and a prominent advocate for science-based approaches to medicine. His 2008 book *Autism's False Prophets* catalyzed a backlash against the anti-vaccination movement in the United States. His three latest books have extended the range of his critiques even further: *Deadly Choices: How the Anti-Vaccine Movement Threatens Us All* (2011), *Do You Believe in Magic? The Sense and Nonsense of Alternative Medicine* (2013), and, most recently, *Bad Faith: When Religious Belief Undermines Modern Medicine* (2015).

Naomi Oreskes, a geologist turned historian of science, is a professor in the Departments of the History of Science and Earth and Planetary Sciences at Harvard University. She moved to Harvard in 2013 after fifteen years as Professor of History of Science and Science Studies at the University of California, San Diego. Her research has focused on understanding scientific consensus and dissent. Her 1999 book *The Rejection of Continental Drift*, her coedited volume *Plate Tectonics: An Insider's History of the Modern Theory of the Earth*, and other scholarly works established her as a first-rate historian of science. In 2004, her short paper in *Science* "The Scientific Consensus on Climate Change" became widely cited and brought her to her detailed study of climate denialism chronicled in her 2010 book *Merchants of Doubt* (with Erik M. Conway), which documented how a small group of contrarian scientists obscured the truth on issues from tobacco smoke to global warming. It has been widely praised (and also attacked). That book in turn inspired this year's feature-length documentary movie of the same title. Her most recent book (also with Erik Conway) is *The Collapse of Western Civilization: A View from the Future* (Columbia University Press, 2014).

James L. Powell is a geochemist, author, and retired university and museum executive. He is executive director of the National Physical Science Consortium. He received his PhD in geochemistry from MIT, taught at Oberlin College, and served as its acting president. He has also been president of Franklin and Mar-

shall College, Reed College, the Franklin Institute, and the Los Angeles County Museum of Natural History. He also served twelve years on the National Science Board. In 1998 he wrote *Night Comes to the Cretaceous* about dinosaur extinction and the modern transformation of geology. His 2012 book *The Inquisition of Climate Change* is a comprehensive examination of the climate denial movement. His 2015 book *Four Revolutions in the Earth Sciences: From Heresy to Truth* describes how four key scientific discoveries (deep time, continental drift, meteorite impacts, and global warming) were all initially rejected but then accepted by science, confirming science's self-correcting nature. Asteroid 1987 SH7 is named for Powell.

Donald R. Prothero is a paleontologist and geologist associated with the Natural History Museum of Los Angeles County and a prolific writer and author. He received his PhD in the geological sciences from Columbia University. His scientific specialty has been mammalian paleontology. He became involved with the skeptical movement in the early 1980s defending evolution and later serving on the editorial board of *The Skeptics Society*. His trade books include *Evolution* (2007), *Catastrophes!* (2011), *Reality Check: How Climate Deniers Threaten Our Future* (2013), *Abominable Science!* (with Daniel Loxton, also a newly elected CSI fellow), and *The Story of Life in 25 Fossils* (2015). He's also written six geology textbooks, including *Evolution of the Earth*, in its sixth edition. Recent awards include the Shea Award (2013) for writing in geoscience and the Gregory Award (2015) for service to vertebrate paleontology.

Stuart Vyse is a psychologist and the former Joanne Toor Cummings '50 Professor of Psychology at Connecticut College, where he was praised as an engaging teacher. His research specialty is irrational behavior. His book *Believing in Magic: The Psychology of Superstition* was winner of the William James Book Award of the American Psychological Association. It is an account of the science behind our most irrational beliefs. Oxford University Press published an updated edition in 2014, with Vyse adding new research on jinxes, paranormal belief, and luck, and making a renewed call for scientific thinking and the naturalistic explanation of the world. Late last year, Vyse began writing a regular column, "Behavior & Belief," for the *SKEPTICAL INQUIRER* website, csicop.org. Some notable recent entries include "Neuro-Pseudoscience," "Has Science a Problem?," "Facilitated Communication: The Fad That Will Not Die," and "Anti-Science Trends at Mid-Decade."

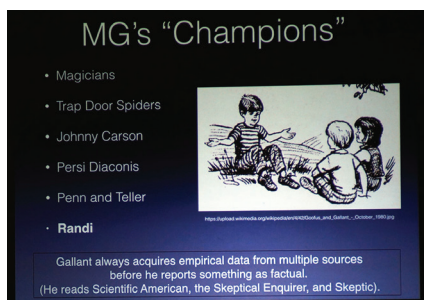
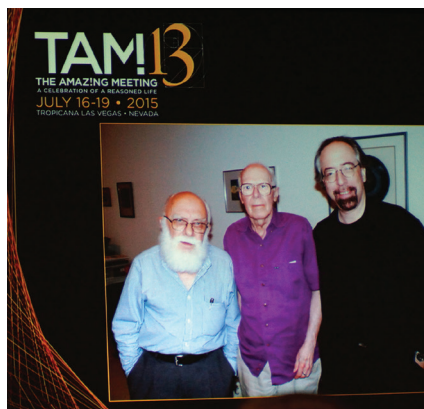
Six Presentations at TAM 13 Celebrate Martin Gardner

KENDRICK FRAZIER All Photos by Brian Engler

Martin Gardner was such a hero to the skeptical community that five years after his 2010 death at the age of ninety-five (the *SKEPTICAL INQUIRER* did a special “Tribute and Celebrations” issue, September/October 2010), celebrations of his life continue. So it was fitting that the 2015 TAM conference (The Amazing Meeting, TAM 13) in Las Vegas July 16–19 devoted six presentations to Gardner and his influence and legacy.

Dana Richards, Martin Gardner’s official biographer and a professor of computer science at George Mason University, said Gardner “studied philosophy to find out what he believed.” He never lost that thoughtful, philosophical, inquiring attitude. Richards said that in January 1974 Gardner wrote to the publisher Crowell, withdrawing his books because of some errant nonsense they had just published. “The occult revolution is reaching heights of insanity,” Gardner wrote in that letter. This, Richards said, was the “the start of a big pushback” by Gardner and colleagues, such as James Randi and Ray Hyman, against the pseudo-scientific nonsense soaking culture at that time. It eventually led in 1976 to their joining philosopher Paul Kurtz in founding the Committee for the Scientific Investigation of Claims of the Paranormal, CSICOP (now CSI).

Colm Mulcahy, a professor of mathematics at Spellman College, called Martin “The Skeptic Supreme” and said, “He was, and is, a debunker.” He also emphasized Gardner’s phenomenal productivity: he had 101 nonfiction books to his credit. (He showed a photo of Martin next to bookcase full of books all by Martin Gardner, joking that this was Martin Gardner “standing by every word he wrote.”) Mulcahy made frequent references to CSICOP and to Gardner’s *SKEPTICAL INQUIRER* columns (published from 1983–2002) and the books based on them.



James Randi, Martin Gardner, and Jamy Ian Swiss (top); James Gardner’s slide listing his father’s champions.

Perhaps TAM’s centerpiece speaker on Gardner was James E. Gardner, Martin’s eldest son and a professor in the College of Education at the University of Oklahoma. James came to the 2010 TAM conference’s special impromptu tribute to his then recently deceased father, but in this 2015 venue he had an opportunity to speak at some length.

Growing up, James knew his dad was “a skeptic *par excellence*,” who had a set daily routine at their home at 10 Euclid Street in Hastings-on-Hud-



James E. Gardner gave a touching tribute to his father, Martin Gardner, at TAM 13.

son, New York. He had breakfast and read the *New York Times*, then went upstairs to his third-floor office to work until lunch. After lunch he worked again until 4 p.m. That was the time he and his wife, Charlotte, reserved for cocktails, and they tried never to miss that hour together even if traveling. Then he returned upstairs to work until dinner, then a bit more work after dinner until bedtime at an early 8:30 p.m.

James playfully referred to his father’s “technology”—typewriter, scissors and paste, and a dial phone. He used an abacus to balance his checkbook. When email came along later, his father did not want it “because he knew he would be even more overwhelmed.” (In his later years, however, James did help Martin do some research for his columns on the Internet.)

James listed his father’s literary he-



Colm Mulcahy, Dana Richards, James Gardner, James Randi, and Jamy Ian Swiss in panel remembering Martin Gardner.



Simon Singh tells of Martin Gardner's influence on him as a skeptic.

roes (William James, G.K. Chesterton, L. Frank Baum, and Lewis Carroll) and his "charlatans" (Ted Serios, L. Ron Hubbard, Peter Popoff, Oral Roberts, Uri Geller, and Dr. Oz for his "homeopathic things"). Martin's champions included "magicians," Johnny Carson, Stanford statistician Persi Diaconis, James Randi, and "The Trap Door Spiders," a New York men's literary and arguing club of mainly science-fiction writers that included Isaac Asimov and Arthur C. Clarke.

"Dad wouldn't talk before an audience, but with a typewriter he was direct, truthful, honest."

— James E. Gardner

James referred to his father's famous reluctance to do public appearances but his determination to engage with pseudoscience and other nonsense in print. "Dad wouldn't talk before an audience, but with a typewriter he was direct, truthful, honest."

Philosopher Massimo Pigliucci (like Gardner, also a past *SKEPTICAL INQUIRER* columnist) spoke on Martin Gardner as a skeptic and public intellectual. Pigliucci said Martin "very early on influenced my skepticism" and added, "I think Martin Gardner is a good role model for all of us to aspire to." But Pigliucci quickly went on to

emphasize that Gardner "didn't quite follow the party line." For one thing, he embraced the idea of mathematical Platonism, the idea that the universe *is* mathematics. Second, he was a mind "mysterian," which holds that the fundamental nature of human consciousness may not be knowable. (Pigliucci referred to these two positions as "weird, but not crazy.") And third, Gardner was famously a philosophical theist. Pigliucci considered these three attributes, balanced them against all of Gardner's enormous contributions to science and skepticism, and derived three lessons:

- 1) Skepticism is about honest, critical inquiry. It is an intellectual attitude. It is not about adhering to a list of specific positions.
- 2) Skeptics can and should be inspired by role models, but role models are not infallible or unquestionable.
- 3) Skeptics either have to admit that some of their main figures hold questionable positions or limit "skeptics" to a very small group. (Pigliucci made clear he favors the former.)

Another speaker was Simon Singh, the British science writer and skeptic. Like so many others, he never met Gardner, "but he really influenced me." Singh recounted a number of topics where Gardner influenced his writings, such as Fermat's Last Theorem, cryptography, *The Simpsons*, cosmology, and quackery.

A final special treat for the audience was the showing of a video of an interview with Martin Gardner, taped by James Randi and magician Jamy Ian Swiss in Oklahoma on Martin's ninetyeth birthday. It was a rare glimpse, in the latter part of his life, of a famously shy and reclusive skeptic, known in person to only a few close friends but who through his clear thinking and penetrating writings shaped two entire generations of scientific skeptics.

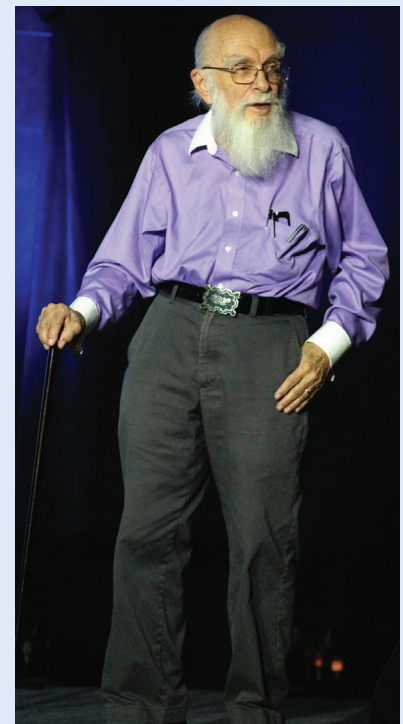
James Randi Also Feted at 'Amazing' Meeting

Martin Gardner wasn't the only famed skeptic honored at TAM 13. James ("The Amazing") Randi, who founded the TAM conference series and for whom it is named, was also the subject of 1) a hilarious opening skit created and performed by musician and TAM host George Hrab titled "Randi: The Musical"; 2) a panel discussion with Randi hosted by fellow magician and TAM program member Jamy Ian Swiss; 3) a special Saturday evening reception and series of invited tributes from Randi's friends and colleagues, ending with remarks by Randi himself; and 4) Randi's closing remarks on Sunday afternoon.

Randi turned eighty-seven in August, just after the conference, but seemed his usual irrepressible self throughout.

"Let's say the hell to anti-vaxxers."

—James Randi



Mysterious Clumps of Worms Line Texas Highways

BENJAMIN RADFORD

The deluge that flooded parts of Texas in late May 2015 created a strange sight on a patch of the state's highways: clumps of worms along the center line. Thousands of worms, initially mistaken for discarded spaghetti, were found in Eisenhower State Park in Denison, Texas.

A June 2 ABC News article by Kaylee Heck explained:

The piles in the middle of Eisenhower State Park were actually worms, Park Superintendent Ben Herman told ABC News. Rangers were checking the back roads of the park in Denison, Texas, found on May 29 when they found the piles lined up in a near-perfect straight line. "We're still puzzled why they decided to line up in the middle of the road," Herman said. "Even our biologist doesn't know why they're spaced so well and in the line."

The fact that the worms came out of the ground isn't a mystery: they can drown in rain-saturated soil. But why did they migrate to the center line on the road, and why did they appear in dozens of discrete, round clumps? The incident left many scratching their heads. What was it? Some unknown force of nature? A worm flash mob?

The answer lies in the fact that the center line of the highway is the highest point in the area (roads are designed with a slight grade to allow for rain runoff). As for the mysterious clumping behavior, Sharon Hill of the site DoubtfulNews.com looked into the case and noted that:

Actually, research has been done on red wigglers that tend to clump in compost piles. Worms communicate by close contact with [each] other. They may gather en masse when conditions are not quite right or in the open, then move, in a herd, to a safe location.

Because the road was closed due to flooding, the center line was the safest and driest place for the worms to be.

This isn't just a piece of animal folk-



lore; a 2012 study published in open-access online journal *PLoS-ONE* titled "Self-Assemblage and Quorum in the Earthworm *Eisenia fetida*" describes "the mechanisms that govern aggregation behavior specially the tendency of individuals to leave or join groups in the compost earthworm *Eisenia fetida*."

It's not clear why no other Texas state parks reported the same event, but there are several plausible explanations. For one thing, different Texas state parks got different amounts of rain and have differing geological and soil conditions. Unless that same type of worm was present in areas with identical conditions, including rain and soil drainage, we might not expect to see other cases. It's also possible that the mysterious worm rings could only have been formed on a closed road; worms in other rain-saturated areas of the state may have attempted the same thing but been crushed en masse by traffic tires long before they could make it to the relative safety of the center stripe and form the unusual clusters. The dead worms would be unnoticed on highways and thus not live long enough to do anything artistic or newsworthy. The worms remained for a few days before returning to the soil without answering questions about their motives.

Benjamin Radford is deputy editor of the SKEPTICAL INQUIRER.

Just a couple highlights:

On his recently announced retirement from the board of the James Randi Educational Foundation (JREF): "Retirement. . . I haven't noticed any reduction in work."

He has nearly completed a new book, *A Magician in the Laboratory*. Only a few more things need to be done before it is ready for the publisher.

Randi wishes he had devoted attention during his career to "the anti-vaxxers," people who deny the enormous medical benefits of childhood vaccinations. "Kids are going to die if these anti-vaxxers get more of a grip on the media." Randi emphasized that he is alive due to medical science, and many people are alive today because modern medicine eradicated smallpox. "Let's say the hell to anti-vaxxers."

"I had an obsession to inform the public" about charlatans and pseudoscientific nonsense and claptrap, Randi noted. "I've put a lot of effort into that. I've put a lot of love into that. . . I want to get back to work. I can't waste any time."

On advice to future skeptics: "Read anything by Martin Gardner. *Anything*." He also advised reading Carl Sagan's *The Demon-Haunted World*, the works of Isaac Asimov, and "my books too."

In his closing remarks Sunday, Randi acknowledged and thanked everyone for their supportive words during the conference. "I cannot thank you enough." He acknowledged "a lot of lovey stuff" said about him. "I've had a lot of hugging here," he noted, adding that he likes hugs. "It is time to say goodbye—for the year. *Au revoir*. See you next year. OK?"

Note: Since James Randi's retirement from the James Randi Educational Foundation (JREF) earlier this year, the JREF board has been considering how to continue the foundation without his direct involvement. On September 1, the JREF board announced that it will convert the foundation into a grant-making foundation. The announcement can be read at <http://web.randi.org/home/jref-status>.

Study Casts Doubt on Omega-3, Antioxidant Brain Benefits

BENJAMIN RADFORD

Omega-3 fatty acids—found naturally in a variety of foods including walnuts, edible seeds, and fish oil—are important for the body's metabolism. In recent years companies marketing vitamin supplements have touted omega-3 and antioxidants as important for maintaining brain health and preventing cognitive decline in later years.

However, a large clinical trial conducted by the National Institutes of Health and published in the *Journal of the American Medical Association* (August 25, 2015) casts doubt on those claims. In one of the largest and most comprehensive studies to date, nearly 4,000 patients were randomly assigned to one of four groups, including one that received a placebo.

The average age of the participants was seventy-three, and nearly 60 percent were female. After testing for changes in cognitive function (first to establish a baseline for each patient and then at two-year intervals) the researchers concluded, "There were no statistically significant differences in change of scores for participants randomized to receive supplements versus those who were not." Since the patients did the same with or without the omega-3 and antioxidant supplements, there was no effect.

According to lead author Dr. Emily Chew, "Contrary to popular belief, we didn't see any benefit of omega-3 supplements for stopping cognitive decline." Though this study casts doubt on the benefit of omega-3 supplements for older patients seeking to slow cognitive decline, younger patients may (or may not) benefit from them. There is some research demonstrating that people who eat diets rich in fish and antioxidants have better brain health, but it's not clear whether there's a cause-and-effect relationship. It is possible that people who have healthier brains for other reasons (such as lifestyle habits or genetics) also are more likely to eat fish-and antioxidant-rich diets.

The study, by the Age-Related Eye Disease Study 2 (AREDS2) Research Group, is titled "Effect of Omega-3 Fatty Acids, Lutein/Zeaxanthin, or other Nutrient Supplementation on Cognitive Function: The AREDS2 Randomized Clinical Trial."

Stephen Hawking Lends Fame to New SETI Search



Famous physicist Stephen Hawking has joined Russian billionaire Yuri Milner to launch a major new effort in the scientific search for extraterrestrial intelligence (SETI). They held a press conference in London to announce injecting \$100 million for a new project they call Breakthrough Listen.

SETI pioneer Frank Drake is another notable figure joining Breakthrough Listen. SETI efforts rely on private funding, and this new project aims to boost the radioastronomy search activity to unprecedented levels.

"We would typically get 24 to 36 hours on a telescope per year, but now we'll have thousands of hours per year on the best instruments," UC Berkeley scientist Andrew Siemion, one of the group's cofounders, said at the news conference.

They say the project will allow scientists to collect as much data on SETI in a day as they now do in a year. The data will be made available to the public, so anyone can help in the search.

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (Required by 39 U.S.C. 3685)

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Farmer in Chile Finds 'Chupacabra'; Science Suggests Otherwise

BENJAMIN RADFORD

A goat farmer in Chile who found two mysterious dead animals in early January concluded that he may have the remains of the Hispanic vampire beast known as *el chupacabra*. The creature, whose name is Spanish for “goat sucker,” is said to suck the blood from small animals such as chickens and goats. It has never been proven to exist, though it is nearly as well known as Bigfoot and the Loch Ness monster. According to the January 22 *Daily Star*, “Goat farmer Javier Prohens was having lunch with friends when terrified farmhand 54-year-old Bricio Saldivar alerted them to the bodies of the strange creatures on the outskirts of the small town of Monte Patria in the east central Chilean province Limari.” Prohens described his farmhand’s reaction: “He was clearly scared and said he had been up at the old winery and found two strange bodies.” The partially mummified carcasses were found amid hay bales in a cellar, and “at first we thought they might be bats, but when we looked closer, we realized they had to be something else as the heads were too big for bats. . . . And then someone said they looked like Chupacabras,” Prohens was quoted as saying.

The chupacabra was first reported in August 1995 by a woman in Puerto Rico who described seeing a bizarre bipedal alien-like creature with spikes down its back. Soon it was dubbed the “chupacabra” and caused a media sensation that spread throughout the Spanish-speaking world. However, as described in my book *Tracking the Chupacabra: The Vampire Beast in Fact, Fiction, and Folklore*, it was later determined that the eyewitness had actually (and mistakenly) described a monster in the sci-fi thriller *Species*, which she had recently seen.

Though the original chupacabra report has been discredited, the stories and sightings spread through the media with the monster’s description chang-



Amid all the sensational news stories about these bloodsucking monsters, there has so far been no analysis by zoologists or scientists.

ing over time. Fewer and fewer people claimed to see the bipedal, spiky-spined monster, and by 2000 it had completely disappeared and was replaced by a variety of four-legged animals left hairless by the skin disease mange. When medical and DNA tests were done on these “chupacabras,” they were revealed to be ordinary animals including dogs, coyotes, and raccoons. Last year, a couple in Ratcliffe, Texas, claimed to have found a chupacabra that turned out to be a raccoon. The word *chupacabra* is now used to describe any animal that cannot be immediately identified or otherwise looks mysterious, either because of hair loss or decomposition.

So if the weird remains found in Chile are almost certainly not chupacabras, what are they? It’s difficult to come to any definitive identification based upon a few photographs, though some characteristics of the creatures suggest an explanation. For one thing, they lack any spikes down the back that are characteristic of the original chupacabra. The skull, paws, and tail look feline, and the size (about a foot long) would match a common housecat. The fact that the animals were found laying one atop the other, as kittens sometimes do, may be relevant as well. A mother cat may have given birth to a litter and two of the unfortunate kittens may have been crushed to death by a bale of hay that toppled over onto them.

Where the animals were found provides another clue: inside a wine cellar. This is where domesticated animals such as cats are known to wander, hide, and even give birth—but conspicuously not a place associated with chupacabras, which are invariably reported outside, usually in desert areas (such as rural Texas) or in rainforests (such as Puerto Rico’s El Yunque preserve, said to be the original home of the chupacabra). An indoor chupacabra would be a first. Furthermore, there is no suggestion by Prohens or anyone else that any goats or other animals had been found mysteriously drained of blood, as the chupacabra is known to do; in any event, the mummified mammals had been dead for many months or even years.

Amid all the sensational news stories about these bloodsucking monsters, there has so far been no analysis by zoologists or scientists. The flesh of these carcasses should be preserved enough to yield a definitive DNA sample, should Prohens or anyone else wish to submit it to a laboratory. If public curiosity prompts the remains to be tested, the results will likely come back as a known animal—just like all previous “chupacabras”—but the mystery will remain. ■