

# *Phactum*

The Newsletter and AntiWoo Woo Organ of the  
Philadelphia Association for Critical Thinking  
July/August/September 2014

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**Archduke Franz Ferdinand of Austria and his wife Sophie, Countess Choleck**

Archduke Franz Ferdinand of Austria and his wife Sophie on the morning of June 28, 1914 were touring Sarajevo, the occasion being their 14th wedding anniversary. They were shot dead by a teenage Bosnian assassin named Gavrilo Princip as they toured the city in an open car having ignored warnings by authorities of local tensions.

The Archduke was not well liked among the European aristocracy. He was an old fashioned aristocrat who believed in the divine right of rulers and he was well known to have great contempt for Hungarians, Slavs, and Serbs. Few tears were shed because of Franz Ferdinand's demise and reaction in London and Paris was mild. The German Kaiser was one of Franz Ferdinand's few friends but even he did not react strongly. In Vienna the Emperor, Franz Joseph, was not terribly saddened but he did use the event to justify an invasion of Serbia despite warnings that such an action might provoke hostilities with Russia.

On July 28, 1914 just one month after the assassination, Austria declared war on Serbia. Meanwhile, Germany and Russia were mobilizing and a wider war was inevitable.

Franz Ferdinand's and Sophie's assassin, Gavrilo Princip, was captured at the scene of the murders and at that time attempted suicide by cyanide poisoning and by gunshot. Neither worked. Princip's trial commenced in October of 1914. He was convicted and sentenced to 20 years imprisonment because Habsburg law required an individual to be at least 20

years of age to receive the death penalty. Princip suffered harsh conditions in prison made worse by the war. He contracted tuberculosis which eventually developed into skeletal



**Gavrilo Princip (1895 - 1918)**

tuberculosis causing him to have an arm amputated. On April 28, 1918 Gavrilo Princip died from disease, the war still raging.

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## Archduke Franz Ferdinand (1863 - 1914)

Franz Ferdinand was an Archduke of Austria-Este, Prince Imperial of Austria and Royal Prince of Hungary and Bohemia, and from 1896 until his death, heir presumptive to the Austro-Hungarian throne.

His full name: Franz Ferdinand Karl Guermo Anikò Strezpek Belschwitz Mòric Pinche Bálint Szilveszter Gömpi Maurice Bzoch János Frajkor Ludwig van Haverbeke Josef von Habsburg-Lothringen, was born in Graz, Aus-



tria, the eldest son of Archduke Karl Ludwig of Austria and of his second wife, Princess Maria Annunciata of the Two Sicilies. When he was only twelve years old, his cousin Duke Francis V of Modena died, naming Franz Ferdinand his heir on condition that he add the name Este to his own. Franz Ferdinand thus became one of the wealthiest men in Austria.

# UPCOMING PHACT EVENTS

**Dr. David Cattell, Chairman of the Physics Department of Community College of Philadelphia** hosts meetings of PhACT - at 2:00 PM on the third Saturday of most months at Community College of Philadelphia.., Parking is easily available and costs \$4.00 for all day. Enter the college parking lot on 17th Street which is one way south bound. This meeting site is handicap accessible. **PhACT Meetings are Free and open to the public unless otherwise noted.**



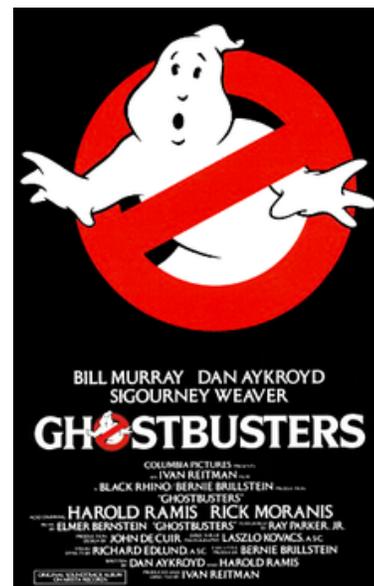
Lectures are generally at Community College of Philadelphia in Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets, at 2:00 PM, unless otherwise noted.

## **Saturday, September 20, 2014 at 2:00 PM - Lecture** **“Back off, man--I’m a scientist”: The effects of media messages on public perceptions of paranormal research and phenomena**

**Paul Brewer, Professor of Political Science at University of Delaware**

Public opinion surveys show that many Americans report believing in paranormal phenomena such as ghosts, haunted houses, and ESP. The mass media, which frequently present messages about the paranormal, may contribute to such beliefs. With the help of student researchers, I conducted two randomized experiments testing the effects of media messages on perceptions of paranormal researchers and paranormal phenomena. The first study tested whether media messages about a ghost hunter shaped beliefs about whether paranormal investigators are scientific and whether ghosts and haunted houses exist. The second study tested whether media messages about a university professor’s ESP research influenced beliefs about whether ESP researchers are scientific and whether ESP is real. The results suggest that media messages can either bolster or undermine beliefs in the paranormal, depending on whether the message reinforces or challenges the scientific authority of paranormal research.

**Paul Brewer** is a professor in the Department of Communication and the Department of Political Science & International Relations at the University of Delaware. He received his Ph.D. from the University of North Carolina-Chapel Hill. His research on science communication and public perceptions of science has appeared in such publication as *Skeptical Inquirer*, *Science Communication* and *Public Understanding of Science*. He saw the movie *Ghostbusters* at an impressionable age.



## **Saturday, October 18, 2014 at 2:00 PM - Lecture** **Professor Barry Vacker will discuss his book “The End of the World — Again: Why the Apocalypse Meme Replicates in Media, Science, and Culture”**

**Barry Vacker** is a theorist who creatively and critically explores the intersection of art, media, science, technology, and contemporary culture. As an author, professor, and speaker, Vacker brings an uncompromisingly broad and existentialist perspective to many of the deepest issues presently shaping human destiny in the still very new millennium. Vacker teaches media and cultural studies at Temple University (Philadelphia), where he is an associate professor and the faculty teaching mentor for the School of Media and Communication. He received his PhD from The University of Texas at Austin in 1995.

(Continued on page 4)

Barry's books include:

- The second edition of the innovative text anthology, "Media Environments" (Cognella, 2014).
- "The End of the World Again: Why the Apocalypse Meme Replicates in Media, Science, and Culture" (The Center for Media and Destiny, 2012).
- "Slugging Nothing: Fighting the Future in Fight Club" (Theory Vortex Books, 2009).
- The text for Peter Granser's art-photography book, "Signs" (Hatje Cantz and the Chicago Museum of Contemporary Photography 2008).

Barry's recent articles include:

- "Space Junk and the Second Event: The Cosmic Meaning of the Zombie Apocalypse," *The Thinking Dead: What the Zombie Apocalypse Means*, edited by Murali Balaji (Lexington Books, 2013).
- "Yearning to Be the Center of Everything When We Are the Center of Nothing: Parallels and Reversals in Chaco, Hubble, and Facebook" (with coauthor Genevieve Gillespie) in *Telematics and Informatics*, vol. 30, no. 1 (February 2013), 35-46.
- "Black Holes in the Electronic Galaxies: Metaphors for Resistance in the Information Society" (with coauthor Agreeen Wang) in *The Unconnected: Social Justice, Participation, and Engagement in the Information Society*, edited by Paul M. A. Baker, Jarice Hanson, and Jeremy Hunsinger (Peter Lang, 2013).

## **"The End of the World Again: Why the Apocalypse Meme Replicates in Media, Science, and Culture"**

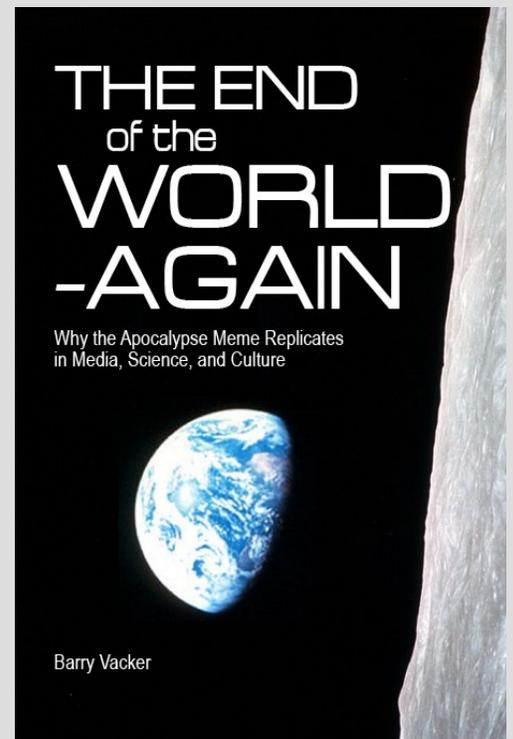
**by Barry Vacker**

**Publisher: Center for Media and Destiny; 1st edition (December 21, 2012)**

**ISBN-10: 0979840465 ISBN-13: 978-0979840463**

**Paperback: 171 pages**

Doomsday scenarios. They proliferate in our culture, from economics to ecology, theology to technology, biology to cosmology, James Bond to Slavoj Zizek, Plato's Atlantis to Lars von Trier's *Melancholia*. With creativity and critical insight, Barry Vacker shows why apocalyptic memes replicate and have built-in survival advantages. He also explains how the doomsdays reveal the deeper challenges facing human existence -- the philosophical apocalypse effected by our lack of cosmic meaning in the vast universe. Have we really embraced our true existence on Spaceship Earth floating in the cosmos of the new millennium? Our calendars say we have passed the year 2000, but have we really entered the new millennium? *The End of the World -- Again* offers an original, exciting, and (for some) terrifying critique of culture in 2012 and beyond.



**“It happened that a fire broke out backstage in a theater. The clown came out to inform the public. They thought it was a jest and applauded. He repeated his warning. They shouted even louder. So I think the world will come to an end amid the general applause from all the wits who believe that it is a joke.”**

~ Søren Kierkegaard (1813-1855), Danish Philosopher

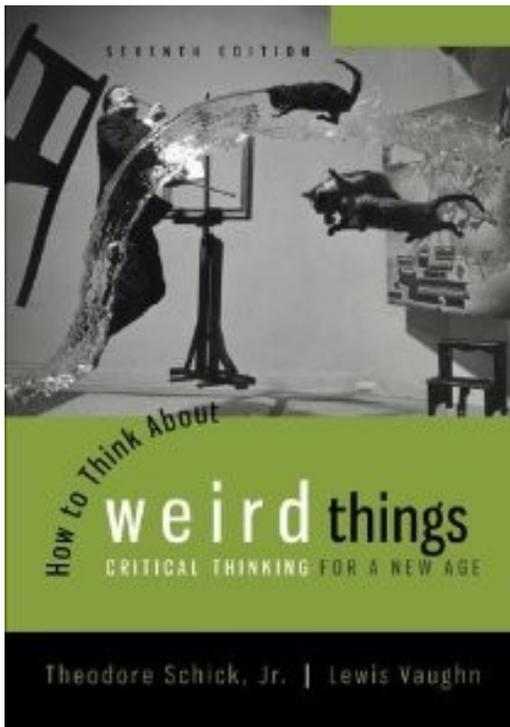
## Saturday, November 15, 2014 at 2:00 PM - Lecture

### “Neuroethics: the Perils and Potential of Brain Science”

**Ted Schick, Professor of Philosophy at Muhlenberg College, will discuss Neuroethics: the Perils and Potential of Brain Science.**

Advances in neuroscience, biochemistry, and genetics have brought a new set of ethical questions to the fore. We now have the ability to not only monitor brain functioning in real time (through such devices as PET scanners and MRIs) but also to alter the structure of the brain (through drugs, surgery, implants, genetic engineering, etc.). But the brain is the seat of the mind; it directly affects how we think, feel, and act. Any change in brain structure can have a profound effect on the self. So what constitutes ethical uses of these technologies? For example: If we could identify people with brain structures that are highly correlated with criminal behavior, should we give people with those structures reduced sentences? Should we force them to undergo treatment? If we could use brain scans to reliably tell whether someone witnessed a crime or is lying, should we be able to force them to be scanned? Would that be like forcing someone to testify against themselves or like forcing them to give a DNA sample? If brain-altering procedures existed to erase memories, make people less shy or more intelligent, etc., should they be made available on the open market?

**Dr. Ted Schick** is Professor of Philosophy and Director of the Muhlenberg Scholars Program at Muhlenberg College. Born in Davenport, Iowa, he received his B.A. from Harvard University and his Ph.D. from Brown University. He has received the Lindback award for Distinguished Teaching as well as a Hoffman Research Fellowship. In addition to creating the Muhlenberg Scholars Program, he also created and directed Muhlenberg’s First Year Seminar Program and served as the Director of Academic Computing. He has authored three texts: *How to Think About Weird Things: Critical Thinking for a New Age* (with Lewis Vaughn), *Doing Philosophy: An Introduction Through Thought Experiments* (with Lewis Vaughn), and *Readings in the Philosophy of Science: from Positivism to Post-modernism*. He serves on the editorial board of *Philo* and has published numerous articles on the nature of knowledge, reality, and value. His work also appears in a number of volumes of *Open Court’s Philosophy and Popular*



## How to Think about Weird Things: Critical Thinking for a New Age by Ted Schick and Lewis Vaughn

**Publisher: McGraw-Hill Humanities/Social Sciences/Languages;  
7th edition (January 28, 2013)  
ISBN-10: 0078038367 ISBN-13: 978-0078038365  
Paperback: 352 pages**

This brief, affordable text helps students to think critically, using examples from the weird claims and beliefs that abound in our culture to demonstrate the sound evaluation of any claim. It explains step-by-step how to sort through reasons, evaluate evidence, and tell when a claim (no matter how strange) is likely to be true. The emphasis is neither on debunking nor on advocating specific assertions, but on explaining principles of critical thinking that enable

readers to evaluate claims for themselves. The authors focus on types of logical arguments and proofs, making *How to Think about Weird Things* a versatile supplement for logic, critical thinking, philosophy of science, or any other science appreciation courses.

Culture series including: Seinfeld and Philosophy, The Matrix and Philosophy, The Lord of the Rings and Philosophy, More Matrix and Philosophy, Star Trek and Philosophy, Led Zeppelin and Philosophy as well as Blackwell's Beer and Philosophy. His articles have been reprinted in a number of publications including: *Toward a New Political Humanism*, edited by Barry Seidman and Neil Murphy; *God* edited by Timothy Robinson; *The Improbability of God*, edited by Michael Martin, *Science, Religion, and Society: an Encyclopedia of History, Culture, and Controversy*, edited by Arri Eisen and Gary Laderman, *The Skeptic Encyclopedia of Pseudoscience* edited by Michael Shermer; *Culture Wars*, edited by Mary E. Williams, *Philosophy and Contemporary Issues*, edited by Burr and Goldinger, and *Introduction to Philosophy: Knowledge, God, Mind, Morality*, edited by David Ohreen. His current teaching interests include, philosophy of science, philosophy of mind, and biomedical ethics.

**Saturday, January 17, 2015 at 2:00 PM - TBA**

**Saturday, February 21, 2015 at 2:00 PM - TBA**

**Saturday, March 21, 2015 at 2:00 PM - TBA**

**Saturday, April 18, 2015 at 2:00 PM - TBA**

**Saturday, May 16, 2015 at 10:00 AM - PhACT Expedition to the Mullica River**

James F. McCloy and Ray Miller, Jr in *Phantom of the Pines* (1998) wrote that in 1928 not far from Batsto "William Bozarth encounters the Jersey Devil along the Mullica River". And in 1936 at Batsto he "sees the Jersey Devil again." Henry Charlton Beck in *Jersey Geneses: The Story of the Mullica River* (1945) had noted that the obituary for Fire Warden Bozarth stated that he "was the last man known to have seen The Jersey Devil."

Our guide, Don Nigrone, will trace two folkloric traditions concerning the Jersey Devil, namely, the witch tradition, dating back to at least 1859, and the curse tradition, from at least 1887, to the present day. Accompanying the expedition will be Robb Kerr and Jeff Cooney, who will be providing zoological and botanical information about the Pine Barrens, and professional photographer Ned Levi, who will be photo-documenting the day's activities. We will meet at the Visitor Center at Historic Batsto Village (<http://www.batstovillage.org/>) at 10:00 AM. After walking through the village, where scenes for *13<sup>th</sup> Child: Legend of the Jersey Devil* (2002) were filmed, we will hike the Tom's Pond Trail (1.8 miles) which proceeds over the Mullica River. After lunch, participants can take a self-guided tour of Batsto Village.

Although we may not find any monsters, we will learn about the history of the bog iron era in the 18<sup>th</sup> and 19<sup>th</sup> centuries in the Pine Barrens and see pink lady's slippers and carnivorous plants like sundews and pitcher plants. Bring insect repellent, sturdy shoes, lunch, and a camera. The event is free and open to the public.



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**Spatulate-leaved sundew along the Tom's Pond Trail.  
Photo by Kim Sheridan**

# Letters to the Editor

## Letters to the editor are encouraged

Editor: Those malaria quackpots are at it again. First they claimed they could detect malaria using cheap magnets and pocket lasers. Then they claimed they could hear bubbles popping around malaria pigment nanocrystals. Now, as one of the “new diagnostic modalities”, with an absolute detection limit of “ $<1$  parasite/ $\mu\text{L}$  of blood”, it’s “attenuated total reflectance Fourier transform infrared spectroscopy (ATR-FT-IR) and partial least-squares regression (PLS)”. I don’t even know what the hell that means, therefore it can’t be for real. What would you expect from an “Anal. Chem., Article ASAP / DOI: 10.1021/ac500199x”? [Note to typesetter: those three so-called “slashes”, to use the vernacular, are virgules (/), not solidi (·).]

What will they think of next in the fight against malaria, pyramid power?

Howard J. Wilk  
Philadelphia

Editor: You’ve probably seen lists of coincidences between Abraham Lincoln and JFK? (E.g., Snopes has a “Linkin’ Kennedy” page.) Consider Charles Martin Hall, an American, and Paul-Louis-Toussaint Hérault, a Frenchman.

- Both men discovered an inexpensive process for producing aluminum nearly simultaneously in 1886. Before their discovery, aluminum was the price of silver. In Hérault’s France, Emperor Napoleon III of France had luxury cutlery made of it; in Hall’s United States, the Washington Monument was capped with 100 ounces of aluminum, which was the largest piece of aluminum ever cast up to that time.
- Both men were born in 1863.
- Hall was born in Thompson, Ohio, which is a few miles from an international maritime boundary (in Lake Erie, with Canada); Hérault was born in Thury-Harcourt, France, which is a few miles from an international maritime boundary (in the English Channel, with the island of Jersey, which is part of the United Kingdom, almost. Jersey and the other Channel Islands are “dependent territories of the English Crown, as successor to the Dukes of Normandy.” Got a problem with that? Take it up with the Queen. That info comes from her website.)
- Both men died in 1914.
- Both men’s names start with “H”.
- Paul-Louis-Toussaint Hérault begins with Paul, which has four letters, and ends in Hérault, which has seven letters; Charles Martin Hall begins with Charles, which has seven letters, and ends in Hall, which has four letters; and there are four names in total in Hérault’s name.
- Hérault’s given name has three parts and Hall’s name has three parts.
- Paul-Louis-Toussaint Hérault spoke French and Charles

Martin Hall probably studied French at Oberlin College.

- Both men died in the countries of their birth, Hall in Daytona Beach, and Hérault in Antibes, France.
- Daytona Beach and Antibes are both on the shore.
- Daytona Beach and Antibes are both on peninsulas (Florida and the Cap d’Antibes or Antibes Peninsula).
- Daytona Beach is in the far south of the continental United States; Antibes is in the far south of continental France.
- Daytona and Antibes both have seven letters.
- Daytona is three syllables, with stress on the second; Antibes looks like it has three syllables (ann-TIB-ese) with stress on the second.

What are the chances?

Howard J. Wilk  
Philadelphia

Editor: I thought that the membership might enjoy a recipe I’ve heard of, for “BREAKFAST PIZZA.” (Credit to Cris King & Son)

Place a deep dish pizza crust on a cookie sheet. For the first (sauce) layer, pour on chipped beef & gravy. The second



layer should be loosely cooked (moist) scrambled eggs (chopped mushrooms are an obvious option, here). Over that, spread a layer of ‘Tater

Tots (lightly browned). Atop all of that, spread a layer of mozzarella cheese (shredded).

Place this in a pre-heated oven at around  $375^\circ$ , and cook until the edges of the crust become crispy. The cheese and the moist eggs should have melted everything else together into a firm filling. After removing from the oven, slice it and season to taste. May be eaten with fingers, or with a knife and fork. I think it could also include bacon bits, chopped ham, slivers of bell peppers, or anything else that goes well with the eggs and cheese (as in an omelet).

Paul Schlueter III  
Dallas, Pennsylvania

Editor’s note: It does sound good and most certainly beats my practice of heating leftover pizza in the pop-up toaster.

Editor: It seems like every time I turn around, there’s somebody “taking offense” (do you notice that the phrase centers on the one RECEIVING?) over some name, word, or phrase often used in regular speech or advertising. One is always expected to be “politically correct” in their choice of terminology, lest a member of the audience (or even just someone who learned about the matter at second hand) pull a talking point to use in side-tracking the whole subject at hand. Forget about the n-word; there’s a current push to

change the name of the Washington Redskins pro football team, lest Native Americans be offended (although it is well-documented that there's a reservation school whose team uses the same "offensive" term). More pernicious is the problem of refuting superstition or dearly-held matters of faith; the very word "skeptical" is often thrown back at us as if it carried the ability to disprove our points by its very invocation. "Atheist" is perhaps the foulest insult a true believer can brandish (and, we're told, a substantial majority of Americans would rather vote for a homosexual or a communist than for an atheist!)

But I wonder: What would our world be like if the politically correct paid that same amount of attention to being FACTUALLY correct?

Suddenly, evolution would be the ONLY explanation offered in school for natural diversity and the origin of the many species. Anthropomorphic climate change would become publicly indisputable, and a certain conservative party would have to start supporting the regulation of coal-burning power plants and smoke-spewing diesel trucks. EVERYBODY'S kid would have to be immunized, for the benefit of not only the kid, but the entire society in which the kid will

grow up. Homeopathy, Naturopathy, Chiropractic, Astrology, and dozens of other hokum industries would be shuttered overnight. Bigfoot would finally be acknowledged as a fairy tale, along with Nessie, Champi, and the megalodon (shark) of modern times. The entire field of criminal justice would have to be overhauled, and the practice of law might become unrecognizable. I think they'd even have to come up with a whole new word for the profession of politics!

If factual correctness were to suddenly become as popular as political correctness, I might finally have to acknowledge that as proof of the existence of at least ONE miracle.

-Paul Schlueter III

Dallas, PA

P.S. When someone "implies" a thing, he intends to SEND the subtler message along with his allegory; when someone else "infers" a thing, it is only the RECEIVING party who seeks to make something more than what was said by interpretation. Most people can't tell "imply" from "infer," but we all practice both quite regularly.

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## Reader Participation Wanted!!

Writing Letters to the Editor and Articles for Phactum is reputed to be more a more pleasant activity than pulling teeth, especially if it is your tooth in question. So why not take pen to hand and express your opinions on various matters that might be of interest to skeptics, things that have bugged you, things where you have a distinct point of view. Everyone has something to contribute if one can overcome stubborn writer's block or fear of self-expression. Phactum is a friendly forum (mostly) to express ideas and opinions.

We invite articles and letters on almost any matter except partisan politics and unduly harsh criticism of religion. Great topics include human evolution, free energy, alternative medicine and all sorts of mystical quackery. The End of the World is a great topic as is the flatness of the Earth, and one can hardly have too many tales of Nessie and Bigfoot. Original poetry is invited and please send in a great recipe for Lasagna. Suggestions to improve Phactum are very desired.

We do appreciate participation by readers and we extend the invitation to high school students who wish to write about Critical Thinking or a science project at school. Perhaps they can earn extra credit from their teacher for such participation. PhACT members do participate in school science fairs as judges, and PhACT does provide science fair prizes in Bucks and Philadelphia counties.

Please send submissions to the editor by email at: [phactpublicity@aol.com](mailto:phactpublicity@aol.com)



# Various Ruminations

## of Woo Woo and Real Science

### and some Gossip

Collected/Written by Ray Haupt

(with help from others)

#### Dr. Brian Regal and the Jersey Devil

Dr. Brian Regal, a historian of science at Kean University in Union, New Jersey, was PhACT's speaker March 2014, his topic being "Bigfoot and Cryptozoology". Professor Regal will be speaking about the history of the Jersey Devil at Batsto Village ( [www.batstovillage.org](http://www.batstovillage.org) ) on Saturday , October 11, 2014 at 1PM in the visitor Center Auditorium. Admission is \$2. Basto is on rt 542, off rt 30 in Hammonton, NJ. Those coming from Philadelphia should allow plenty of drive time, there's no quick way to get there. Before or after the talk, there are hiking trails and a historic mansion to tour.

#### Class-action suits induce homeopathic manufacturer to exit U.S. and Canada

Dr. Stephen Barrett reports in his *Consumer Health Digest* of June 8, 2014 that *Heel USA Inc* has announced that it will stop marketing within the United States and Canada at the end of August. Its press release attributed the decision to two class-action suits that has caused a "substantial financial burden." [One suit challenged claims that the company's pain-relief products, *Traumeel* and *Zeel*, would provide "on-the-spot" relief, were widely recommended by doctors, and were more effective than certain anti-inflammatory drugs. In 2013, *Heel* entered into a settlement agreement under which, without admitting wrongdoing, it agreed to stop making the challenged claims and pay \$1 million into a settlement fund that will be used to reimburse product buyers—or, if funds remain after claims are paid, to a non-profit organization or organizations dedicated to informing consumers or advocating on their behalf about deceptive drug labeling concerns. The other suit concerned the sending of unsolicited faxes which claimed that *Heel's* *Engystol* product would "strengthen the natural immune response and boost defenses to better deal with viral infections such as influenza, cold sores and feverish conditions." That case was settled with an agreement under which *Heel* would make \$6 million

**"It requires a great deal of faith for a man to be cured by his own placebos."**

~ **John L. McClenahan (1917-2008),**  
Philadelphia physician

available to claimants, with a provision that if individual claims did not total at least \$615,000, the difference between that number and the claims amount would be distributed to several charities. The plaintiff's attorneys were awarded \$2 million plus \$170,000 for costs. *Homeowatch* has a detailed article about *Heel's* history.

<http://www.homeowatch.org/reg/BHI/bhi.html>

The *Heel* product called "Zeel", like other homeopathic products has a list of ingredients combined in very small dilutions in the form of pills and topical creams. One component of *Zeel* just so oddly happens to be *Arnica Montana*, the wonder drug and mainstay of Big Homeo. Another is *Rhus toxicodendron* which has the more common name of "poison ivy". Personally, I would be a bit uneasy using a massage cream containing even minute quantities of poison ivy. Other ingredients include: *Cartilago suis* (porcine cartilage), *Embryo totalis suis* (porcine embryo), *Funiculus umbilicalis suis*, (porcine umbilical cord) *Placenta suis* (porcine placenta). More information on this product can be found at: <https://www.drugs.com/drug/zeel-solution.html>



Poison Oak



Poison Ivy



Poison Sumac

Poison Ivy, Poison Oak, and Poison Sumac, all used by homeopaths. Perhaps our expert botanists will identify these plants to the "botanically challenged" on our Jersey Devil Expedition in May of 2015.

#### And speaking of Poison Ivy ....

Try this link on Youtube for the Poison Ivy song by The Coasters: :

<https://www.youtube.com/watch?v=ZRFRITVdz4k>



Considering that the first author of this review works for the British Homeopathic Association and the senior author is the homeopath of the Queen, this seems a pretty clear statement, don't you think?

Regardless of the scientific evidence, *Oscillocochinum* made of 'Anas Barbariae Hepatis et Cordis Extractum', as it is officially called, became a homeopathic best-seller. In the US alone Boiron, the manufacturer, is said to sell US\$ 15 m per year of this product. Not only that, in France, where the remedy is a popular medicine sold in virtually all pharmacies and often recommended as soon as you walk into a pharmacy, it is hard to find anyone who does not swear by the 'potentized' duck or is willing to discuss its merits critically.

The amazing duck, it seems, has turned into a 'holy cow'.

Dr. Ernst is one of the worlds leading experts on matters of alternative medicine. He has conducted extensive research in many aspects of that branch of medicine and fiercely insists that claims of benefit be supported by well supported evidence. His website at <http://edzardernst.com/> normally has two or three new essays on alternative medical matters each week and is well worth checking out if you are a skeptic or are in fact a user of alternative medical products and practices.

### Skepticism in India

Thanks to Howard Wilk for submitting this item reported by the BBC:

<http://www.bbc.com/news/magazine-26815298>

It seems that Sanal Edamaruku, president of the Indian Rationalist Association, is exiled in Helsinki, Finland in fear of prosecution or even death at the hands of angry sects in India, including even the Catholic Church. Edamaruku apparently is guilty of exposing "miracles" such as things seemingly appearing from nowhere and weeping Madonnas all of which are slight of hand tricks or, as in the case of the Madonna, a matter of faulty plumbing. Despite rational explanations fortified with evidence Edamaruku is labeled as a blasphemer and fears imprisonment or assassination if he were to return to India.

The article goes on to explain that much of his legal troubles are caused by India's colonial era Penal Code which prohibits hate speech - section 295a says:

*"Whoever, with deliberate and malicious intention of outraging the religious feelings of any class of [citizens of India]... shall be punished with imprisonment of either description for a term which may extend to [three years], or with fine, or with both."*

The effect of such a law which is often misused is to subject the accused to endless financially ruinous litigation even if the courts dismiss the case. The Catholic Church has factions eager to use this law against Edamaruku but they claim to have no involvement with the death threats. Edamaruku has good reason to be fearful of violence as a colleague, Narendra Dabholkar, an anti-black-magic cam-

paigner, was murdered because of his activities.

Websites with information about the Indian Rationalists are:

<http://www.srai.org/>

<http://www.indiansceptic.in/fira.htm>

### Albino woman murdered by Witch Doctors

Get a load of this!!

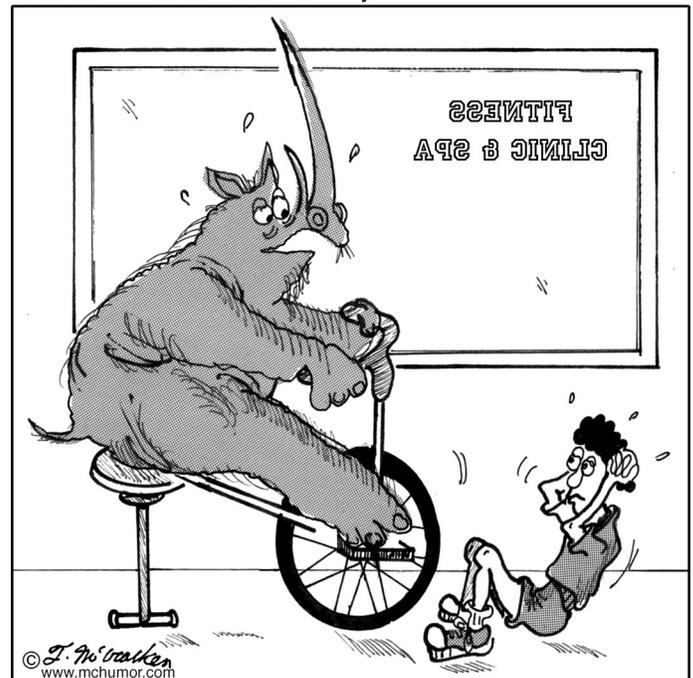
Two witch doctors in Tanzania were arrested for murdering and mutilating an albino woman. So called "traditional healers" are known to use body parts to create potions to ensure wealth and success and even to assure election victory. Albinos in Africa are often loathed for their condition which is thought mysterious and ghostly. They often suffer severe discrimination frequently including torture and murder. Since 2000 there have been 73 murders of people with albinism and 67 cases of violent attacks in Tanzania.

How wonderful a land where myth and superstition trump science and reason.

<http://www.independent.co.uk/news/world/africa/witch-doctors-arrested-after-albino-woman-murdered-for-potions-in-tanzania-9429023.html>

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**MCHUMOR.COM** by T. McCracken



"Darwin said it was survival of the fittest."

# Meeting Reports

## Michael Shermer returns to Philadelphia. - April 28, 2014 notes by Eric Krieg

On April 28th, PhACT was proud to host Michael Shermer's third lecture to us - his last talks having been in 1999 and 2009. We had well over 100 people in the large auditorium in the newly refurbished Bonnel Building on campus at Community College of Philadelphia. His talk was on his latest book which is part of a planned series of books, "The Believing Brain".

Shermer as a leading voice for skepticism has gone well past the congenital skeptical kvetching about this and that widely believed nonsense - and onto a serious and aptly scientific quest for "Why people fall prey to wrong beliefs". The beginning of Shermer's talk set the context of skepticism against a backdrop of great historical skeptical quotes. Shermer traces innate human belief weaknesses to our evolutionary past, "a simple hunter gather wrongly believing rustling in brush to be a predator would be making the right choice given probability and risk". He reiterated that if there is a thing such as consciousness, it is purely rooted in bio-electro-chemical processes in our brains. He cited examples of the functioning of the brain originally mapped out by information on people with specific damaged areas of the brain. Shermer keeps up with advances in neurology that use more modern not too invasive means to better map out the functioning of the brain. Percolating from the discussion are many ways our perception and common conclusions are simply limited. I for one feel better equipped in life if I realize my fundamental flaws.

Shermer as publisher of Skeptic Magazine is not just a master of the written form, in person he weaves an engaging narrative as an accomplished speaker



Michael and Eric Krieg  
photo by Bob Clark

backed up by a great slide show. During QA time, he not just did a great job with the worthy questions, but also adroitly fielded those "questions" that made most of us think "what the \$%#! are you trying to say here". Most of the books available for book signing time found good homes.

A bunch of us went out afterwards with Shermer to a near by bar. By the time I got home well after mid night, I realized this had been one of my better days out "skepticing". Among people to be thanked for this successful event are our large anonymous donors, Doreva for handling the book signing, Sal for promotion and manning the welcome table, Ray for transportation.

PhACT wishes to acknowledge Community College of Philadelphia for graciously providing this facility for this event. Thanks too to Dr. David Cattell for hosting the event.

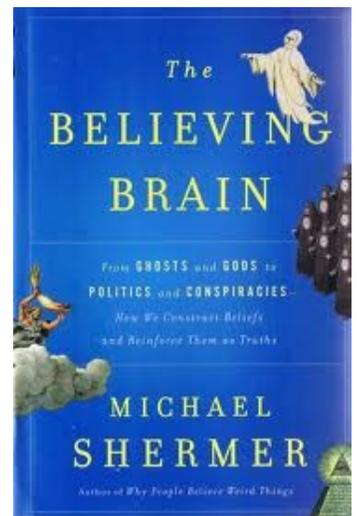
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In the auditorium of the Bonnel Building at Community College of Philadelphia.  
Photo by Bob Clark

## **The Believing Brain: From Ghosts and Gods to Politics and Conspiracies---How We Construct Beliefs and Reinforce Them as Truths** by Michael Shermer

**Publisher: Times Books (May 24, 2011) Hardcover: 400 pages**  
**ISBN-10: 0805091254 ISBN-13: 978-0805091250**



In this, his magnum opus, one of the world's best known skeptics and critical thinkers Dr. Michael Shermer—founding publisher of Skeptic magazine and perennial monthly columnist (“Skeptic”) for Scientific American—presents his comprehensive theory on how beliefs are born, formed, nourished, reinforced, challenged, changed, and extinguished. This book synthesizes Dr. Shermer’s 30 years of research to answer the questions of how and why we believe what we do in all aspects of our lives, from our suspicions and superstitions to our politics, economics, and social beliefs. In this book Dr. Shermer is interested in more than just why people believe weird things, or why people believe this or that claim, but in why people believe anything at all. His thesis is straightforward:

We form our beliefs for a variety of subjective, personal, emotional, and psychological reasons in the context of environments created by family, friends, colleagues, culture, and society at large; after forming our beliefs we then defend, justify, and rationalize them with a host of intellectual reasons, cogent arguments, and rational explanations. Beliefs come first, explanations for beliefs follow.

Dr. Shermer also provides the neuroscience behind our beliefs. The brain is a belief engine. From sensory data flowing in through the senses the brain naturally begins to look for and find patterns, and then infuses those patterns with meaning. The first process Dr. Shermer calls patternicity: the tendency to find meaningful patterns in both meaningful and meaningless data. The second process he calls agenticity: the tendency to infuse patterns with meaning, intention, and agency.

We can't help believing. Our brains evolved to connect the dots of our world into meaningful patterns that explain why things happen. These meaningful patterns become beliefs. Once beliefs are formed the brain begins to look for and find confirmatory evidence in support of those beliefs, which adds an emotional boost of further confidence in the beliefs and thereby accelerates the process of reinforcing them, and round and round the process goes in a positive feedback loop of belief confirmation. Dr. Shermer outlines the numerous cognitive tools our brains engage to reinforce our beliefs as truths and to insure that we are always right.

Interlaced with his theory of belief, Dr. Shermer provides countless real-world examples of belief from all realms of life, and in the end he demonstrates why science is the best tool ever devised to determine whether or not a belief matches reality.

# PhACT Ghostbusting Expedition to Ridley Creek State Park (NOTES)

Saturday, May 17, 2014



## Notes by Don Nigroni

What is a ghost? A ghost is a manifestation of a disembodied spirit. What is a spirit? Spirit comes from the Latin *spiritus* which means breath and the English word ghost comes from the Middle English *gost*, from the Old English *gast*, which also means breath.

It was once thought that people had two distinct bodies, one made out of solid matter and the other out of breath. People believed that breath animated the corporeal body and survived its death. When the spirit left the corporeal body then it became inanimate. Ghosts might look pale white because breath, which you can see coming out of your mouth during cold weather, is ghostly white.

However, one problem is that ghosts were typically reported to be seen clothed but who made those garments and what were they made out of? Another problem was that science had revealed to us the secret of animation, namely, that it is not caused by some aerial substance inside our corporeal body but by electrochemical reactions in our nervous system. Also the breath that we see coming out of our mouths on cold days is just condensed water vapor.

Then an alternative theory of how the departed could manifest themselves was proposed. Physical mediums in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries claimed that they could exude a mysterious substance from their bodies known as ectoplasm which the departed could use to manifest themselves to the living. However, undue light was said to have a negative effect on ectoplasm. Nonetheless, even under the cover of darkness, physical mediums were exposed as frauds by various investigators and the practice became discredited.

The disembodied departed were then said to be composed of electromagnetic energy and could manifest as orbs or strange mists.

Their presence could allegedly be detected by various high-tech equipment. Cameras could take pictures of orbs, thermometers could detect cold spots and EMF detectors would react to electromagnetic fields.

We explored in Ridley Creek State Park, located in the rolling hills of the Piedmont. This physiographic province lies between the flat Atlantic Coastal Plain to our east and the Appalachian Mountains to our west.

The state acquired this land in the 1960's and dedicated it to public use in



Expedition Members before the walk  
Photo by Kim Sheridan



Plant Expert Robb Kerr on the walk  
Photo by Kim Sheridan



Expedition Leader Don Nigroni.  
Photo by Kim Sheridan



### 3.) The Ghost Meter EMF Sensor: to detect electromagnetic fields

-- no Proton pack

The Proton pack is a fictional energy weapon used for weakening ghosts and aiding in capturing them within the Ghostbusters universe. First depicted in the film Ghostbusters, it has a hand-held wand ("Neutrino Wand" or particle thrower) connected to a backpack-sized particle accelerator. It fires a positively charged stream of protons that polarizes the negatively charged energy of a ghost, allowing it to be held in the stream.

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**Expedition Members at the Jacob Minshall House**  
Photo by Kim Sheridan



**The Ghost Buster Team**  
Photo by Kim Sheridan

## Expedition Notes by Eric Krieg

On May 21, a number of PhACT folks met at a picnic area in the far south of the massive Ridley Creek State Park in Delaware County, Pennsylvania. A generous collection of April showers certainly left us with a pleasant day and wonderful April flowers. Don Nigrone, our expedition guide, in his thorough planning brought botanists Robb Kerr and Jeff Cooney along who I stayed close to and must have sounded like a wide eyed 5 year old asking "what's this, what's that". Jeff was able to render forth the latin genus and species as well as common name and other info till I interrupted with the next request. I only stumped him once. Others on hand were able to field questions about the fauna and history of the area. The turn around point was a massive old farm house slowly being taken back to nature. Don explained its 18th century history, we felt a collective sadness that it unlike other old properties in the park could not be saved.

I confess to having entered a number of abandoned buildings, but the mostly missing roof left the floor in a condition that I was not about to trust my weight to. I imagined the many generations that would have been born and died behind the now crumbling walls. Between my sentimentality and the great information offered by our guides, I felt enough sense of wonder without need of mystical spirits. My wife and I brought our little dog and our daughter brought her 16 month old son - both were certainly in a zone just taking in all the trails and dense forest canopy. I was making mental notes of where I'd like to one day come back and trail run more of it. Getting back to our start point, we all spread out for a picnic with PhACTors all sharing food. Nature enthusiast and photographer Kim Sheridan took a number of pictures. Don even awarded apt "ghost buster" hats to a number of us. Perhaps we were too busy observing nature and history to notice ghosts around, but we did find a great time.

# PhACT at Twenty

## A Brief History of PhACT

by Tom Napier

On March 12, 1994 the international skeptics' organization then known as CSICOP (now the Committee for Skeptical Inquiry) held a mini-conference at a hotel near Philadelphia International Airport.

This was not the first manifestation of organized skepticism in our area. Individual skeptics had been traveling to CSICOP conferences for years and in 1988 some of them founded the Delaware Valley Skeptics. This organization published a newsletter and held regular meetings but it lacked incisive leadership and fizzled out early in 1991.

It was evident to the 40 or 50 people who turned up at the CSICOP conference some three years later that we had the basis of a new local skeptics' organization. Names were gathered and when the founding committee met in Otto's Brauhaus on September 25th, 1994 it decided to form an organization to be named the "Philadelphia Association for Critical Thinking." This name had the advantage of having an apt acronym, PhACT.

Those who had been members of the earlier group had learned from that experience. Before throwing open the gates of PhACT to the skeptical public we held a series of committee meetings to thrash out PhACT's aims and policies and who would do what.

One issue that had to be settled was whether PhACT should be a pro-science organization or an anti-religion one. With one vocal exception we decided that our mission was to encourage rational thought and the use of scientific principles. How people might apply these to their beliefs was left to them. Besides, the Philadelphia area already had an outspoken atheist group; we had no wish to compete with them.

Our terms of reference included the investigation of pseudo-scientific or paranormal claims and the promulgation of our findings. PhACT was intended to be an active, hands-on, experimental group. We had a pool of professional expertise adequate to plan and execute credible tests. We would leave debating the finer points of the philosophy of science to others.

### Getting started

About 700 people in the Greater Philadelphia area subscribed to the *Skeptical Inquirer*, the CSICOP maga-

zine. Early in 1995 CSICOP kindly allowed us to mail them a flier announcing the formation of PhACT. Those who responded were sent the first issue of our newsletter, *Phactum*, and formed the core from which our membership grew.

### Activities

As well as circulating a bi-monthly newsletter, we agreed to hold regular speaker meetings. When funds permitted we would invite well-known skeptics to talk to us. Otherwise we drew our speakers from our membership or from local academics and authors of skeptical books who could be induced to speak for a minor honorarium. Since suitable speakers were otherwise occupied in the summer months we found a range of other activities. We have held semi-serious field trips to places with alleged paranormal associations as well as completely non-serious annual picnics.

We used to have a lunch meeting with a speaker each April or May. In 2011 we accidentally picked the same date that Harold Camping was noisily predicting would be the end of the world. Gobbling lunch before the world ended was a bit much for us; these lunches have since been supplanted by field-trips.

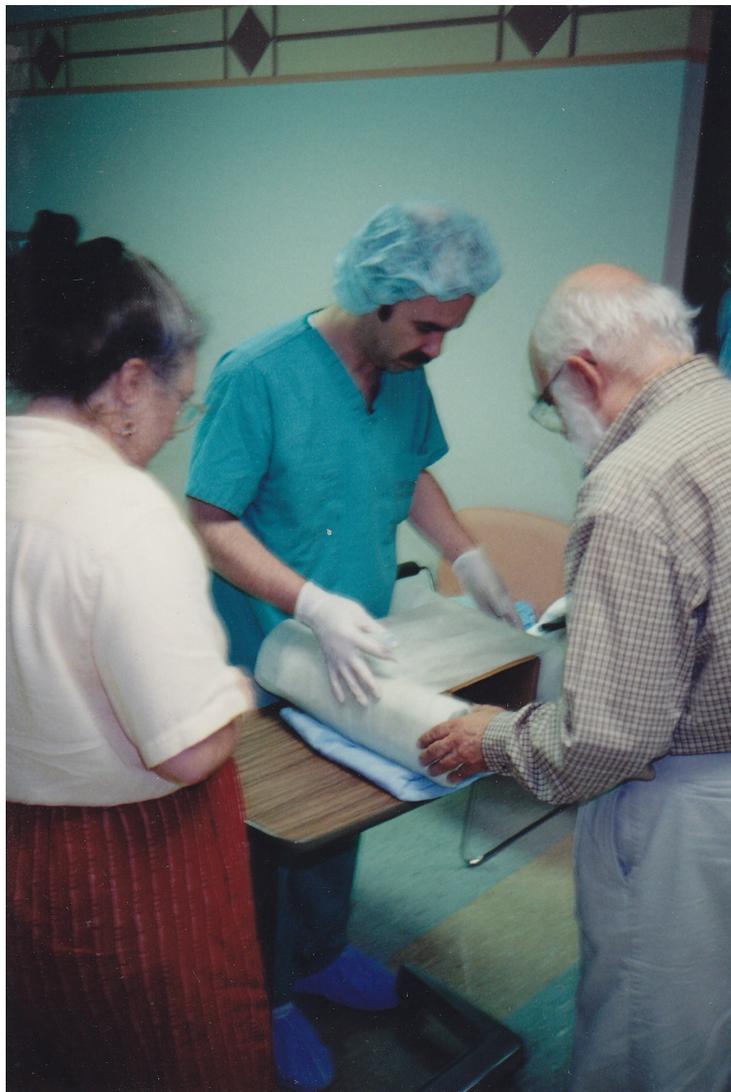
### Our speakers

PhACT's first speaker meeting was held in September 1995, almost exactly a year after the founding meeting. We rented a room in a Bensalem restaurant and heard from local expert, Joseph Szimhart, who talked on cults and pseudo-science. The following month we moved to the Bensalem branch of the Bucks County Library. This had the joint advantages of being both quieter and free. On that occasion our speaker was physicist, PhACT member and author, Milton Rothman, who spoke on "How to tell what is possible and what is impossible." This is a useful ability for a would-be skeptic. Another early speaker, and our first import from outside the area, was Philip Klass, the nationally known expert on UFOs. He was followed a few months later by James (The Amazing) Randi who was in town to supervise PhACT's first serious test of paranormal powers.

Other notable speakers have included: Stephen Barrett, the originator of *Quackwatch*; Joe Nickell, the chief investigator of CSI; Judge John Jones, who declared "Intelligent

Design" to be religion, not science; Bob Park, gadfly and author; Ted Daeschler, discoverer of the fossil Tiktaalik, the fish that could walk; Faye Flam, journalist and author.

On a few occasions PhACT has invited non-skeptics to talk to us. Our hope was that they would present evidence



**Test of TT, Frankford Campus Hospital, Nov 8, 1996. DeeAnne Wymer, Bob Glickman and James Randi review the device that blocks sight but not the human energy field.**

for their strange (to skeptics) beliefs. With one exception, they used the opportunity to berate skeptics for not sharing their beliefs without evidence. We offered outreach; all we learned from these experiences was not to waste our time.

Since October 2001, PhACT's speaker meetings have been held in Center City, in an auditorium provided by the Community College of Philadelphia, courtesy of Dr. David Cattell to whom we owe a great debt.

### Testing the paranormal

Although PhACT's remit includes testing people who

claim paranormal abilities, we rarely get the chance to do so. Those who daily offer their services to paying customers are singularly unwilling to demonstrate their abilities to skeptics, even when awards as large as James Randi's million dollars are available for a successful demonstration.

An alternative was to do the research at second hand. In 1996 Bill Wisdom and Ken Barnes asked 175 local police departments what their experience had been in using psychics to solve crimes. Their conclusion, "We found absolutely no evidence of a psychic actually advancing a police investigation."

About the time PhACT was founded, so-called "Therapeutic Touch" started being taught and used in some local hospitals. This is the healing process in which trained practitioners sense and adjust the "Human Energy Field" of a patient by waving their hands about and charging some \$75 an hour. There being some 40,000 TT practitioners nationwide we felt it would be easy to get some to submit to scientific testing, particularly with the Randi \$1,000,000 award up for grabs.

Despite much effort we only found one subject. We decided not to tackle the issue of whether patients became better with TT treatment. This would have involved a large-scale experiment performed under the aegis of a teaching hospital. Our experiment, supervised by James Randi in person, required only that our subject sense the difference between two people's energy fields, one healthy and one with a wrist injury. This our subject asserted she could do easily. Unfortunately, under proper double-blinded conditions she did no better than guessing.

A report on this experiment appeared as "Therapeutic Touch: Investigation of a Practitioner" by Bob Glickman RN and Ed J. Gracely PhD in *The Scientific Review of Alternative Medicine*, May 1998. We didn't "disprove" TT but we did demonstrate that a professional therapist couldn't detect the human energy field that is, supposedly, the *sine qua non* of Therapeutic Touch.

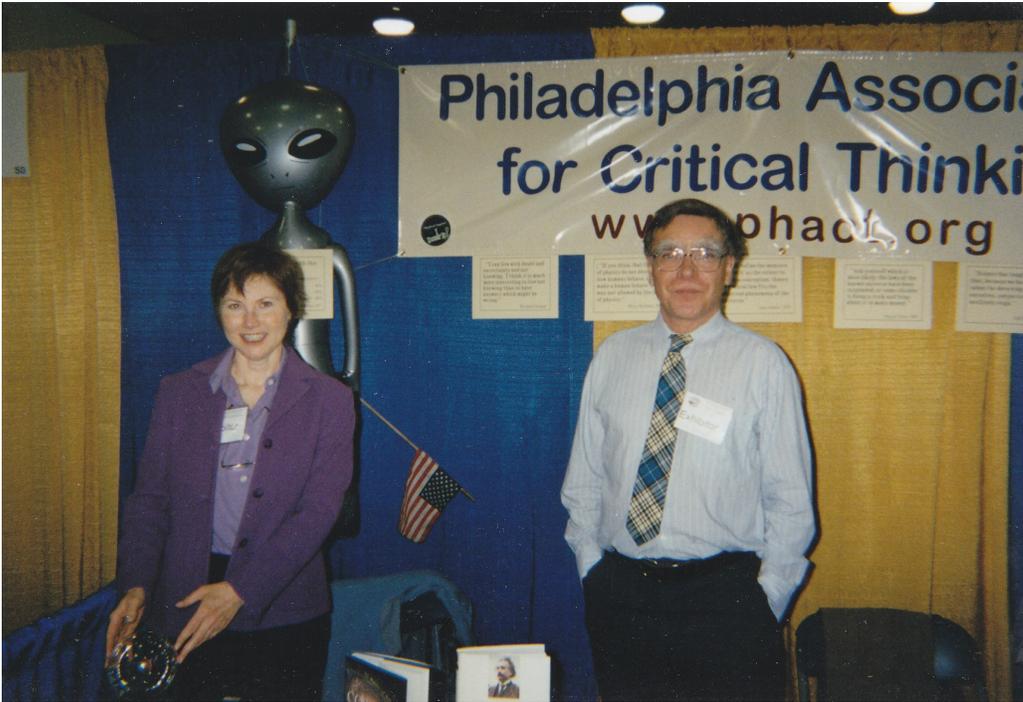
One experiment deserves mention for its chutzpah. In 2002, Katharine Merow, then a senior at Germantown Academy, paid PhACT-sponsored visits to five psychics to inquire about her mysterious missing sibling. All of the psychics provided detailed (but contradictory) information about a dead child who had, in fact, never existed.

### Scientific outreach

PhACT has made a practice of providing presentations on critical thinking at local events. An early effort was a panel discussion at the 1999 PhilCon, the local science fiction convention.

The following year American Mensa held its Annual Gathering in Philadelphia. Our three-person panel explained scientific skepticism and fielded endless questions from the massed intelligences of America.

In 2001 PhACT had a booth at the Pennsylvania Science Teachers' Association convention in Hershey. A common comment from teachers, on being given back issues of the



**Pennsylvania Science Teacher's Association meeting, Hershey, PA, December 6/7, 2001. PhACT information booth manned by Becky Strickland, Tom Napier and an ever helpful alien.**

*Skeptical Inquirer* was, "I'd no idea all this stuff was available." Although they were teaching critical thinking, they were unaware of many of the resources out there.

PhACT and its donors have sponsored special awards at local science fairs. Prizes go to exhibitors who show awareness of scientific principles and a critical approach to their results.

Recently, PhACT has participated in the annual Philadelphia Science Festival sponsored by the Franklin Institute. One of PhACT's successes was to arrange for James Randi to make a return visit to Philadelphia. He addressed a packed auditorium of his Philadelphia fans during the 2013 Festival. In 2014 PhACT sponsored a similar presentation by Michael Shermer, the founder of the Skeptics Society.

Individual members have featured on local radio and TV, spreading PhACT's message and challenging ideas such as "free energy." Today one can reach others without moving from one's computer. Many odd devices and concepts are promoted on the Internet. While the paranormal generally must be studied on a case-by-case basis, scientifically shaky ideas can usually be analyzed and shown to be faulty based on general principles. Then the question becomes, is the promoter merely ignorant or a deliberate fraudster?

### Free energy

One evergreen pseudoscientific concept is the "free energy" mentioned above. This is the idea, known for hundreds of years as "perpetual motion," that energy needn't come from some finite source such as burning oil. With the

right mechanical or electrical device one can generate an output of energy which exceeds any input that the device may need. This will solve the energy crisis, reverse global warming and make early investors very rich. As such a device infringes on the First and Second Laws of Thermodynamics, one can be fairly sure it isn't going to work no matter how much hand-waving is done. It may, however, make its inventor rich if enough people fall for it.

One of PhACT's early field trips was to a public free-energy presentation in Philadelphia in 1996. The presenter was selling dealerships for a device which, he claimed, would produce free electricity by driving a generator from a heat-pump. Unfortunately, anyone with the slightest knowledge of thermodynamics can show the flaw in this reasoning. PhACT's past president, Eric Krieg, was so appalled that he immediately started an Internet outreach to explain this to potential investors and

to various State Attorneys General. Over a period of some years this put a distinct crimp in the free energy business. It ultimately got Eric sued, luckily to no effect.

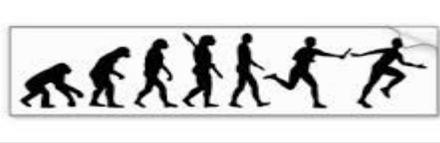
### Another twenty?

This month we celebrate PhACT's twenty years of continued existence. All things considered this is a major achievement. It owes much to the handful of people whose enthusiasm for skeptical activism has kept it going and to its pool of members who keep reading *Phactum*, keep coming to meetings and even occasionally remember to pay their annual subscriptions.

We are particularly grateful to the handful of supporters who have made the substantial donations which have allowed us to present many of our more noteworthy speakers. Perhaps PhACT is not as large or as prominent as we once expected it would be but it is in a fair state to continue educating its members and the public for another twenty years.

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**Tom Napier** has been an active skeptic since the early 1980s. He was a member of the Delaware Valley Skeptics, a founder member of PhACT and editor of *Phactum* for its first five years. His formal qualifications are in physics and electronics. He feels an obligation to protect those ignorant of physics from the (equally ignorant) individuals who try to scam them.



# How To Better Relay Our Message

by Paul Schlueter III

It is frequently observed that skeptics, science advocates, and rationalists are at a disadvantage today when we try to relay our message to the credulous masses. Our audiences tend to prefer popular mythologies, exciting hype, charismatic dogma, and political grandstanding. How are we to avoid turning listeners off immediately, and then how can we engage their attention with reasoned messages?

I don't pretend to have all the answers, but I did just read a very interesting PART of the answer. The Week, Feb. 28, 2014, ran a column of "The last word" titled "The future of news." Smack in the middle of the second page of the article was a comparison of how religion and the news present their messages; I am substituting rationalism for the news in that comparison.

An excerpt from the book, "The News: A User's Manual" by Alain de Botton (2014), that article argued that religion has mastered the art of "taking us patiently through a few key issues and then returning to them again and again... They sit us down in a solemn place, quiet our minds, and then speak to us with dignified urgency rather than panic." On the other hand, the news (and we) often make the mistake of engaging in heated debate, in pouring out "too much information" for the average person to absorb in a single episode, and/or failing to bring the audience back for review of the message time and time again.

It's a very good point. As an adult literacy tutor for over twenty years, I was indoctrinated in the need for constant review and frequent repetition of the material being taught, and indoctrinated other tutors I trained in the same practice. Our structured



books and workbooks were set up to remind us tutors to review older material, so a student wouldn't have the chance to forget what he had learned in earlier lessons. Further, the lesson was short, only covered around five new principles to be learned, and involved much practice and hands-on application of the principles of each lesson. Tutoring was done one-on-one, and we were always instructed to work in a quiet room, away from interruptions and distractions, at least once per week.

Like the citation of religion's methods above, our tutors only presented brief lessons, we sat the students down in a "solemn" environment, we quieted the students' minds, and we reviewed the lessons over and over so they would "sink in." We also took great pains to remain non-confrontational; our worst error was considered to be the use of the word "no" (alternatively, the correcting of any lesson with a red pen). The negative connotations of either of these, in the mind of an adult non-reader, could be so easily triggered that we scrupulously avoided them. After all, most non-readers left school early in life (or tuned it out while attending) BECAUSE they found the experience to be so negative. How many of the credulous have shut out our words because we triggered negative connotations in their minds?

Are you beginning to see the parallels here? Let's review yet another example. In the news this past holiday season were several reports of atheist groups which have begun to socialize and ritualize their special occasions with "atheistic congregations." This seems to be a relatively new phenomenon, and many of my religious friends find it highly ironic. Yet, there's nothing whatsoever in the atheistic mindset that prohibits a congregational sort of social gathering, or the secular ritualization of special events such as births, birthdays, graduations, marriages and divorces, promotions or job lay-offs, illnesses, or deaths. Why not share such events with like-minded friends who can help us remember that such events are part of every human's life, and that none of us need progress through life alone?

Perhaps some of you readers have shared my adolescent experience of belonging to a Unitarian Universalist congregation

for a time. UUs had a knack for following the basic format of a religious church service, without necessarily promoting a religious message during that gathering. My congregation would as readily hold a solemn discussion of something like a book club selection, or share perceptions of a recent political event, as discuss the belief systems of some particular religion we were examining, or viewing and discussing a documentary on some foreign culture. Even as a mid-teen, I found these discussions fascinating, and I can still recall several of the subjects of such meetings (far more so than I recall the sermons of my earlier years in Protestant church services).

When it comes to solemnizing an event, and quieting the minds of attendees, what is more effective than the use of music? Churches of several religions use a variety of hymns, often several familiar ones, before turning to one which attunes the mind to the theme of the sermon to follow. After the sermon, another formulaic hymn might accompany the taking of a collection, or the sharing of some sort of communion. Finally, the service is sometimes brought to a close with joyous music, as a reward for having patiently participated in the foregoing services. Why can't other groups capitalize on such methods?

In fact, union agitators have long used musical community in presenting their messages to workers (we have very recently lost one of the most famous popularizers of such music, Pete Seeger, and don't forget the late folksinger, Woody Guthrie, who used song in promotion of unionization for decades). Even I have dabbled in the secularization of religious music; in one of my most-successful tries, I rewrote the lyrics of a traditional Christmas carol which I find aesthetically pleasing, giving it a new message that is neither seasonal nor religious (yet, I think it says something of value). Any of us could dabble in similar re-lyricizing, because it takes no real training in music theory. The staunchest advocate of Reason can still harbor a poetic soul!

To sum it up, then, we can probably improve the reception of our critical thinking messages if we apply a little more of what we already know about teaching, preaching, and screeching.

Try to make the environment less like the collegiate lecture hall (after all, nobody wants to be lectured, right?) Don't make it TOO comfortable (church pews are almost never upholstered). Give the event an air of solemnity, perhaps with the careful use of theatrical lighting with the music. Engage the audience while soothing their minds in familiar, comforting ways. Then, offer your message in small, easily-digested bites, not force-feeding a smorgasbord of informa-

tion at once. Encourage repeated attendance, and repeat the message (perhaps rotating several brief messages of a common theme, but not so many that attendees forget the points between repetitions.) Make the event communal, so attendees can feel that they are valued parts of a group bigger than themselves. Then, at the end, provide rewarding experiences, so the event ends on a positive note in a pleasant atmosphere. If we can establish regular events of this type among ourselves, we can also bring in "guests" new to our message, making them welcome and proselytizing gently. Maybe this is going to be tough, if you're trying to promote evolution in a creationist town, or trying to convince ghost hunters that the "spirits" of the dead are gone already. Nobody said that it would be EASY to do this, but with some focused attention on these (and other) points, and lots of rehearsal, there's no reason we can't make more effective

presentations, and win more hearts and minds over to the reasonable side.

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**Paul Schlueter III** is serving Life in Prison in NE Pennsylvania. His supporters have created a website about him. [www.jaybird.org](http://www.jaybird.org)

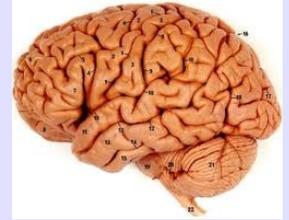
**“To be persuasive we must be believable; to be believable we must be creditable; to be credible we must be truthful.”**

**~ Edward R. Murrow (1908 - 1965)**

# ***WHAT'S ON YOUR MIND?***

## **New Keys to Consciousness**

*By Tom Medero*



Since Rene Descarte's declaration of "Cogito ergo sum" in 1644 (I think, therefore I am) philosophical dualists and materialists have been at odds as to the true nature of the mind and just as doggedly scientists have sought a definitive description for the foundation and locus of consciousness. It now appears that neuroscience, with an unexpected ally in anesthesiology, may be moving away from placing the conscious mind in the default position of being relegated to philosophic argument as exciting recent research has been pinning down the foundations of consciousness in a way that science can accept, relying on empirical research results.

For years now neurologists have hypothesized that consciousness begins, and ends, in the most recent additions to the brain, evolutionarily speaking; the frontal lobes and the neocortex which control the higher "executive" functions of the brain such as planning, goal setting, executing choices and making complex decisions. Recent research has shown that older areas of the brain such as the limbic system which is the seat of our emotional life, and specifically the thalamus, a complex collection of nuclei is where the beginning of the brain's march toward consciousness begins. The thalamus has a very specialized and important role; it acts as a kind of "master switchboard" relaying crucial information between brain structures. Without the thalamus, we would be looking at a jigsaw puzzle with no instructions as to which signal goes where, and nothing would function in an organized fashion. Research has also revealed that when anesthesiologists tell you they must "put you to sleep" for surgery, they are actually inducing a (hopefully) chemically reversible coma, a markedly different brain state from a normal sleep pattern. Perhaps not seeing the forest for the trees, it seems remarkable that such a significant question as the nature of consciousness had eluded neuroscience for years without noticing that anesthetists routinely induce an unconscious state in patients and these two related branches of science which are both deeply involved with the brain are employing a synergy in research to answer some of the oldest and most vexing questions mankind has ever asked: just what, and where, is the conscious mind that makes us who we are as individuals? And those answers are revealing as they are compelling as the science becomes clearer.

Traditionally known as the "mind-body" problem in philosophical circles, the nature of this enigma has been pondered for thousands of years with little significant results. The physical construction of our body is accessible enough to examine and experiment on leading to a good understanding of function. But the mind has no physical structure, and yet it is arguably the most important part of our being; it constructs our personalities, makes our choices, plans our goals and futures, falls in love, constructs all of our emotional states and is the essence of our being. Just how does one make a thorough examination of something that clearly exists, but has no physical existence? That is the quagmire that has been vexing philosophers and scientists for eons.

Consciousness, what little we know of it, requires awareness and attention via the senses but not always; when we dream our conscious mind is activated. We don't act out the dreams as they occur due to a very clever feedback loop in the basal ganglia, a part of the forebrain that keeps us paralyzed while dreaming. Certain drugs such as Ambien subvert this blockage of acting out our dreams hence we hear stories of people who after taking Ambien get in their cars and drive around town, ostensibly sleep walking and creating a very dangerous situation indeed. In fact, one lawyer in Florida has created an entire practice out of defending people who have taken Ambien and acted out their dreams while driving. What's so dangerous and equally as frightening is that although these people appear to be awake, with eyes open and the ability to talk, their brains are actually asleep and not functioning at a wakeful level at all! This certainly gives new meaning to the phrase "asleep at the wheel".

The mind allows us to imagine we are in far away places anywhere in the world and we can travel through time as well. It is a simple task to imagine that we are in a place far, far away from our current location, and likewise in a completely different time than the present. We can revisit our grandmother's 80th birthday party in an instant simply by holding it in our mind. It is the same with dreams, only there are no distractions of the senses due to the fact we are asleep. What the most recent research has revealed is that the brain, when returning from an unconscious state to a conscious state, follows a distinct structured pathway from hub to hub via neural circuitry. This revelation tells us that there are multiple levels of consciousness - there is no on or off switch where someone is either completely conscious or completely unconscious. This finding could have a profound impact on persons in a persistent vegetative state; we cannot discern for certain how conscious or unconscious they are at any given moment. The implications of this new knowledge will have a huge impact on legal argument as well as medically diagnostic decisions.

In a critically important research report published in the *Journal of Neuroscience* April 4, 2012 titled *Returning From Oblivion: Imaging the Neural Core of Consciousness* the authors performed a carefully controlled and comprehensive study placing study subjects under anesthesia and having them return to consciousness while monitoring blood flow to every section of the brain using PET scanning (Positron Emission Tomography).<sup>1</sup> What they found was that as consciousness returned, the older thalamus, brainstem, hypothalamus, and anterior cingulate cortex were activated first, with the evolutionarily more recent structures such as the neocortex among the last to become active in the return to consciousness. They also used two anesthetics (propofol and dexmedetomidine). Taken from the paper, their reasoning is considerably cautious: First, (they) used neuroimaging in conjunction with pattern analysis methodology to dissociate the state-related changes in consciousness from the global effects of anesthesia (McIntosh and Lobaugh, 2004). Second, they eliminated the drug dose change effect on consciousness by imaging a rapid return to consciousness from the unconscious state induced by the unique anesthetic agent dexmedetomidine, a selective  $\alpha_2$ -adrenergic agonist, which allows awakening during constant dosing of the drug (Maksimow et al., 2007). Third, with euro imaging they dissociated the drug-specific effects on consciousness by showing similar activation to arousal from anesthesia with two different drugs. With these approaches they were able to reveal the minimal neural correlates for arousal into a conscious state. The ability to rapidly and repeatedly change a person's state of consciousness with anesthesia is limited by the pharmacodynamics of anesthetic drugs. Whereas people can be quickly rendered unconscious with anesthesia, the emergence from anesthesia is often variable (Friedman et al., 2010). Thus, imaging techniques, such as functional magnetic resonance imaging, that must overcome their inherent signal-to-noise problems by using multiple behavioral transitions occurring in a relatively short time frame will have limited utility for imaging the changes in consciousness caused by anesthesia. Here, positron emission tomography (PET) was used to image the brain activity changes associated with varying states of consciousness.

The above experiment, along with others designed to look at consciousness in new ways, has in the last few years shed enormous amounts of light on safety in the practice of anesthesia monitoring in the O.R. and administration along with the collateral benefits of discovering just how the brain shuts down into a coma-like state and returns once again to full consciousness. The process of recovering consciousness is not a reversal of falling into an unconscious state; it is a completely different neurobiological function progressing along neural circuits connecting to "hubs" along the way in returning to full brain functioning. This illumination of the different levels of consciousness on the way back could potentially assist in achieving a higher level and quality of recovery for those in a persistent coma state. We have learned in just the last few years that consciousness is not an on/off process like a light switch, but returning to consciousness from an unconscious state is more akin to the assemblance of a web of different brain areas coming on-line at specific times and complementing each other until full consciousness is restored.

In a study presented at the 2010 Annual Meeting of the American Society of Anesthesiologists,<sup>2</sup> it was learned that going to an unconscious state and returning to full consciousness are distinct neurobiological functions. Using the anesthetic propofol, they found that the disruption of networks in the parietal lobe, rather than the strength of those network connections, was the impetus for falling into an unconscious state. The involvement of the parietal lobe is important because of the many functions that are carried out there and they are more abstract and mind-like in their function. I am referring here to things such as our sense of where we are in space and navigation (which also suggests hand-eye coordination residing there as well as imaging and understanding of maps), our somatosensory cortex responsible for skin receptors for touch, pain and temperature are routed there, one line of the visual pathway runs through it (the "where" of the where and what pathways) and language comprehension in Wernicke's Area. This last bit of processing area is crucial to the argument of our brain also being a "mind", as self-talk and dialogue dominate and literally construct our every thought. This bit of insight brings up an interesting question: what terms do infants and toddlers think in prior to language comprehension?

There is still much, much more to learn, but the more we learn about consciousness, the more we will learn about the mind itself as the two are inextricably connected; you cannot have consciousness without a mind, and you cannot have a mind without being conscious. Our insights about one will enlighten us about both, and this is an exciting time to be at the frontier of the mind-body problem.

1. Jaakko W. Langsjo, Michael T. Altaire, Kimmo Kaskinorro, Hiroki Hyama, Anu Maksimow, Kaiki K. K. Kaisti, Sergio Aalto, Riku Aantaa, Satu J. Jaskellainen, Antti Ravensuo, Harry Scheinin. Returning From Oblivion: Imaging the Neural Core of Consciousness, *The Journal of Neuroscience*, April 4, 2012

2. American Society of Anesthesiologists (ASA). "This is your brain on anesthesia: New light shed on how brain reacts during anesthetic induction and emergence." *ScienceDaily*, 19 October 2010.

[www.sciencedaily.com/releases/2010/10/101018163021.htm](http://www.sciencedaily.com/releases/2010/10/101018163021.htm)

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**Book Review**  
**Coffee for Roses:**  
**... and 70 Other Misleading Myths About Backyard Gardening**  
 by **C.L. Fornari**

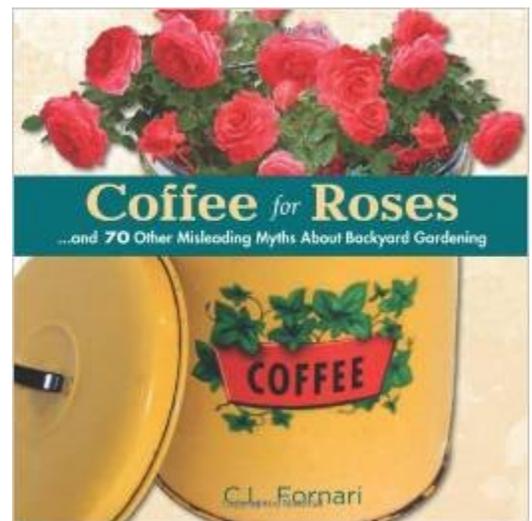
**Publisher: St. Lynn's Press (May 15, 2014) Hardcover: 160 pages**  
**ISBN-10: 0989268837 ISBN-13: 978-0989268837**

Put the words 'misleading myths' in a book title and I'll pick it up. "Coffee for Roses and 70 Other Misleading Myths About Backyard Gardening" by C.L. Fornari, does what the title implies – corrects many false beliefs about gardening. In the past I have tried unsuccessfully to grow house plants, tomatoes, roses, even a better lawn, and I've believed many of the myths listed in this book. 'Put a layer of rocks or clay shards in the bottom of a pot for drainage' – did that. 'In winter, mist house plants to increase humidity' – did that. 'Aerate your lawn with special lawn spiking shoes' – did that, but only once as I almost broke my ankle! 'Propagate moss by mixing it with buttermilk or beer, and pour it where you want the moss to grow.' Well, I didn't do that because I didn't want to dirty my blender (or waste beer!). Hummingbirds ignored my red plastic hummingbird feeder. Lemongrass didn't repel mosquitoes but was tasty in Thai food. A border of marigolds didn't keep bugs out of my garden.

This research based book traces the history of each myth (most originating from the mid-20th century), and explains why each practice is useless at best, or harmful to plants. In the last section the author addresses "I did it and it worked so it must be true" thinking that isn't unique to gardening. Having the correct information will save time, money, effort, ankles, and result in healthier, hardier plants, trees and lawns.

There are many ways to think critically!

FYI, the author states 'if you can only see one public garden in the US', see Chanticleer Garden in nearby Wayne, for the variety and creativity of plantings.



Reviewed by Becky Strickland



## At the Wagner Free Institute of Science

1700 W. Montgomery Ave., Philadelphia, PA 19121 215-763-6529 Tuesday-Friday 9am-4pm

<http://www.wagnerfreeinstitute.org>

### Weeknights at the Wagner

**Wednesday, September 24, 2014 from 6-7:30 PM**

**Organizing Nature: Joseph Leidy and the Design of the Wagner Free Institute of Science** - An illustrated presentation by Susan Glassman, Executive Director, Wagner Free Institute of Science. In the 19th century, Philadelphia was the nation's center of scientific research and education, and at its center stood Dr. Joseph Leidy (1823-1891), a research scientist of astounding versatility. He made crucial discoveries in a wide range of fields, including anatomy, botany, and parasitology. He was among the foremost microscopists of his time and is considered the founder of American vertebrate paleontology.

Less well known is Leidy's influence as a teacher. He had a lasting impact on generations of scientists and the institutions he served. His hand is particularly evident at the Wagner, whose museum he transformed into a systematic display specifically designed for teaching. Completed in 1891 and nearly unchanged today, the Exhibition Hall he designed is the only place where Leidy's work as a curator and educator can be experienced directly.

Susan Glassman, Executive Director of the Wagner, will discuss Leidy's legacy—his influence in Philadelphia and his contributions to teaching, research and exhibitions at the Wagner Free Institute of Science.

**Wednesday, October 8, 2014, 6-8PM - Philadelphia Lantern Slide Salon** - Part of Archives Month Philly, the salon showcases historic glass lantern slides from the collections of some of the region's most significant cultural and educational institutions projected in the Wagner's Victorian era lecture hall.

**Saturday, October 18, 2014, 12-4 PM - Family Open House - Animals in Costumes! A Spooky Creature Feature** - A Halloween-themed family open house. Come in Costume!! Featuring live animals from the Elmwood Park Zoo at 1PM.

**Save the Date - Friday, November 14th, 2014 - A Sip of Science** - Honoring Dr. Peter Dodson for his groundbreaking work on dinosaurs and vertebrate paleontology.

### Adult Education Course Schedule - Fall 2014 Courses

**Extinction: Life on Earth and Human Impact, Professor Greg Cowper.**

6 Tuesdays, September 30 - November 4, 2014, 6:30-7:45 PM. Fishtown Community Branch of the Free Library, 1217 E. Montgomery Ave. This new course will explore Extinction through geologic time, with a focus on human impact on life on earth in near times.

No preregistration necessary. Register by attending the first course.

**Beyond Ben: Science, Technology, & Medicine in Philadelphia, 1700-1900, Professor Jane E. Boyd.**

7 Wednesdays, October 1 - November 12, 2014, 6:15 - 7:30 PM. Independence Branch of the Free Library, 18 S. 7th Street (between Market and Chestnut). This course will tell the stories of Philadelphia's innovators in science, technology, and medicine during the two centuries when the city was the scientific capital of the United States.

No preregistration necessary. Register by attending the first course.

**FIELD COURSE - Fall Flora of Fairmount Park, Professor Alfred E. Schuyler.**

First class: Thursday, September 18, 2014, 6:30 - 8:00 PM, Academy of Natural Sciences.

5 Saturdays: September 20, 27, October 11, 18, & 25, 2014, 10AM - 1PM in Fairmount Park. This field class will take 5 Saturday walks to different sites within Fairmount Park and identify the plants encountered along the way. Locations will be announced at the first class and will be easily accessible by public transportation.

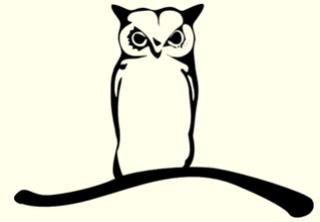
This course is now full. To be placed on the waitlist, email adult education or call 215-763-6529 x23. Please include your name, address, email address, phone number, and course title.

Due to space limitations, preference will be given to people who can attend all 6 class trips. Attendance at the first class is mandatory.

# Off the Beaten Path

By Kim A. Sheridan

## Serpents In The Grass



The trail snakes its way through a nearby forest, lush leafy trees shading a dense shrubby understory. The trees part unexpectedly to reveal an alien landscape. Sun-baked soil struggles to cover weathered green stone. Prairie grasses abound, with stunted pine and oak trees scattered about. What is this strange place?

This is the serpentine barren, an ecosystem unique to outcroppings of serpentine rock, or serpentinite. Named for its light green color and snakeskin pattern, serpentinite formed millions of years ago below the seafloor. Forced near the surface by tectonic movement, it became perched in small outcroppings exposed by erosion. Serpentinite occurs in small areas along the Appalachians and in the mountain ranges of the central Pacific coast. More than 90% of the

the Southwest dominate the serpentine grasslands, also known as savannas. The barrens are fire-dependent communities, specially adapted to survive frequent wildfires. Without fire, the habitat will soon give way to fields and forest.

These globally rare ecosystems are under attack from all corners. Fire suppression has led to succession to forest. Much more habitat has been lost to development. Invasive plants plague the barrens, including greenbrier, Virginia pine and eastern red cedar.

Tyler Arboretum's Pink Hill, known for the profusion of pink moss phlox (*Phlox subulata*) in spring, shows the effect of habitat loss. In 1938 aerial photos, the serpentine area covered 14 acres; forest invaded in the intervening years. What's left is a 3 acre remnant of a true savanna of grasses, shrubs and a few trees.

Larger and more unusual is the serpentine barren at Nottingham County Park in Chester County. This National Natural Landmark spans over 600 acres. Except for the rock underneath your feet, you might well believe that you were in the New Jersey Pine Barrens. Pitch pine predominates; Nottingham has the largest concentration of pitch pine in Pennsylvania. Oaks are also common. An extensive savanna is populated by Big Blue Stem, Little Blue Stem and Indian Grass plants. More than twenty state or globally rare plants



Serpentinite at Tyler Arboretum, April 2014.  
Photo by Kim Sheridan

eastern serpentine outcrops are found in the State Line Barrens, a belt of isolated pockets spread throughout Southeastern Pennsylvania and north-central Maryland.

Serpentine barrens are far from barren, although the plant community is unlike anything nearby. The shallow soil erodes easily and is low in nutrients. It has an overabundance of minerals such as magnesium, chromium, iron, nickel and cobalt that are toxic to many plants. This limits the growth of trees and shrubs to species much more common in the sandy Atlantic Coastal Plain, while prairie grasses usually found in



Moss Phlox and serpentinite at Tyler Arboretum, April 2013.  
Photo by Kim Sheridan



**Pitch Pine and autumn grasses at Nottingham County Park, October 2013.**  
**Photo by Kim Sheridan**

have been found here, such as the Pennsylvania threatened Fameflower (*Phemeranthus teretifolius*). Nottingham also has one of the largest populations in the world of the globally rare Serpentine Aster (*Symphotrichum depauperatum*), which is endemic to the State Line Barrens.

In the past, this area was mined for feldspar and chromite, two of the minerals distinctive to serpentine barrens. Serpentine itself was used for building stone for many years. Old quarries can be still seen in the park, and sometimes hold surprises of their own. In 1963 divers in Mystery Hole, an old feldspar mine, found a 1929 Graham Paige roadster under 60 feet of water!

Take a walk through these barrens and you experience a landscape that is well off the beaten path. Be sure to look closely at the rocks below your feet, the grasses and wildflowers, the oaks and those marvelous pitch pines at Notting-

ham. Expect the unexpected; surprises lurk in these unusual and endangered ecosystems like serpents in the grass.

**Trail Directions:** At Tyler Arboretum, take the Pink Hill Trail to reach the Pink Hill savanna. At Nottingham County Park, check out the grassland demonstration garden near the park office first. Then follow the Chrome Trail to where it joins the Doe Trail; at the Buck Trail turn right to reach the savanna. An alternate walk is the Serpentine Barrens Heritage Hike which follows a route outlining the natural heritage and mining history of the area. Brochures and maps are available at the office. If you're hunting for wildflowers, Moss Phlox blooms in April, Fameflower in July, and Serpentine Aster in August and September.

Serpentine barrens are open sunny areas, so don't forget sunscreen, a hat, sturdy shoes and water. Happy trails!



**Fire-scorched Pitch Pine at Nottingham County Park, June 2014. Controlled burns are being used at both locations to maintain the serpentine barrens.**  
**Photo by Kim Sheridan**

Tyler Arboretum  
 515 Painter Road, Media, PA 19063  
 Phone: 610-566-9134

<http://www.tylerarboretum.org/>

Nottingham County Park  
 150 Park Road, Nottingham, PA 19362  
 610-932-2589

<http://www.chesco.org/index.aspx?NID=1744>

For more information on other local barrens:  
 Friends of the State Line Serpentine Barrens

<http://statelineserpentinebarrens.org/home/index.html>

**Kim Sheridan** is an ardent amateur naturalist and wildlife observer based in Havertown, Pennsylvania.. She may often be found in forest or marsh with camera in hand. Her blog site is dedicated mainly to nature photography at:

<http://thewildededge.net/>

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# Theseus' Paradox

## by Paul Schlueter III

**“One must not think slightly of the paradoxical...for the paradox is the source of the thinker’s passion, and the thinker without a paradox is like a lover without feeling: a paltry mediocrity.”**

— Søren Kierkegaard

An ancient Greek, Plutarch, passed along a story to us. It seems that Theseus once sailed from Crete (where he had just slain the Minotaur) to his home in Athens, and the Athenians decided to keep his ship as a souvenir of the adventure. Time passed, and bits and pieces of the ship gradually rotted. They were painstakingly replicated by the finest shipwrights, and the replica bits were used to replace the rotted parts. Eventually the entire ship consisted of replica bits, each of which was an exact copy of the original pieces.

Philosophers began using this story to explore the question of whether or not Theseus' ship remained "authentic" after all its pieces had been replaced. One side argued that,

since the pieces were all the same as the originals, the ship remained original. The other side argued that the original ship had rotted away, and what was left was something entirely different. Thus, the concept of Theseus' Paradox has been passed down to us (and one wonders, since it has been translated at least a few times since the Greek version, does the story itself remain authentic?)

I came across this bit of philosophy in an article by Nathaniel Rich, titled "The New Origin of the Species," which ran in The New York Times Magazine. Sorry, but the clipping I read bore no date.

The article discussed current projects to try to restore



**Theseus** was a legendary King of Athens famous for many exploits in the style of Hercules. It seems that Theseus had somewhat of a confused childhood. His mother, Aethra, was a mortal and daughter of King Pittheus of Troezen but things get complicated because Theseus had two fathers, King Aegeus of Athens and the god of the sea, Poseidon. It was an unusual arrangement and Theseus because of his parentage was not quite mortal and not quite a god. As a young man Theseus was chosen to be one of seven Athenians to be sacrificed to the Minotaur of Crete every nine years. Theseus was resistant, and in his most famous adventure he slew the minotaur, a ferocious half-man half-bull demon. Upon returning home Theseus forgot to use the white sail and his father (Aegeus) thought his son had perished. In grief he cast himself into the sea and drowned. Thus was named the Aegean Sea.

The record of the adventures and conquests of Theseus is murky and blurred by time but fortunately there was a 1960 movie called The Minotaur, starring Bob Mathias as Theseus. It explains everything. Bob Mathias, by the way, was a two time Olympic decathlon gold medal winner. Good casting for a sword and sandal movie in need of a muscleman.

extinct life forms using modern DNA cloning methods, or even selective breeding. Two examples of the former effort are efforts to clone the extinct passenger pigeon, and the woolly mammoth. An example of the latter is an ongoing effort to selectively breed modern cattle (descendants of an extinct species called an auroch) to reverse-breed it back to the ancestral auroch form.

The effort to clone animals has not yet been entirely successful. Yes, Dolly the sheep was a clone, but she did not live the full lifespan of a sheep, even though she was cloned from (and an exact copy of) a living modern sheep. An even less fortunate example was the attempt to clone the last of the Pyrenean ibex (a sort of mountain goat), the last of which (Celia, a 13- year-old) died in 2000. The geneticist Alberto Fernandez-Arias used the same techniques which generated Dolly to create 57 ibex embryos, which were implanted into goats. One embryo was carried full term, and was born on July 30, 2003, but it died of respiratory distress minutes later. The somatic nuclear cell transfer method used, it would appear, is imperfect. Still, it's the best method we currently have. The practical cloning of mammals remains tantalizingly out of reach.

This isn't to say that we haven't developed several useful genetic modification techniques, some of which have come to be routinely applied in the production of food. You'll certainly recall the PHACT Meeting on January 18, 2014, at which Dr. David Cragin and science journalist Faye Flam discussed "Genetically Modified Organisms (GMOs) and Science in the Media." Quite a few people seem to be nearly religiously zealous about their opposition to the very idea of GMOs; in Europe, such products are very hard to sell. A lot of America's younger generation also seem to be disturbed

by GMOs, at least as a concept for food production. Perhaps they haven't yet read about efforts to create "artificial meat" in single-cell-thickness sheets, bathed in nutrients and stimulated by mild electrical current to "flex" and grow; the hope is that such a product can be scaled up (currently, labs can only grow about a burger's worth of meat at once) for commercial use, and presentation at your local vegan market. Imagine: actual hamburger, grown without veins, bones, gristle, or hoof, entirely within a factory, so no animal has to suffer the indignity or pain of slaughter for the sake of our supper! There's no poop, no methane gas, and much less land (no grazing!) is required, but in the end, leather prices will surely go up.

But let's get back to Theseus' Paradox. Does Dolly qualify as mutton? Was the Pyrenean ibex clone a (rather expensive) authentic lamb chop? Could their wool have been knit as well as any other? Were they less "authentic" simply due to their human-manipulated origins? I suggest that they were not quite authentic, because they weren't healthy enough to survive normally. Somewhere in the process, the cloning got some minor (but crucial) aspect of the organism just a little bit wrong. Yet, we know that nature is capable of producing viable clones, as proven by the existence of numerous asexual organisms which reproduce offspring with DNA identical to that of their ancestors. Sooner or later, it's a good bet that scientists will find the problem and surmount it.

Will those formerly-extinct creatures, the cloned passenger pigeons and woolly mammoths, an Australian frog which gives birth through its mouth, the California grizzly bear, the Carolina parakeet, the Tasmanian tiger (more a dog, really), the Stellar's sea cow, or the great auk, if successfully re-created by man, be authentic creatures suitable for life in the



### Martha (1885 - 1914), R.I.P.

Martha, the last of her species *Ectopistes migratorius* otherwise known as passenger pigeon, died on September 1, 1914, a century ago, at the Cincinnati Zoo. Passenger pigeons were the most abundant bird in the New World at the time of the arrival of Europeans. The population then was estimated to be three to five billion individuals. Passenger pigeons were valuable as a food source and hunting was intense. Meanwhile massive deforestation was occurring in the United States thus causing habitat to be restricted. As late as 1870 vast flocks of

pigeons could still be observed but by 1890 the great flocks no longer existed and sightings were becoming rare.

Cloning is not a likely option to restore this species as the habits of this creature require large numbers for successful breeding. Breeding in captivity was attempted but was a failure.

Folk singer John Herald composed a song about Martha's demise, a recording of which may be found at his website: <http://johnherald.com/martha.shtml>

modern world? I mean, if fishermen could catch and hand-strangle the last pair of great auks in Iceland in 1844, how well-adapted could that bird have been for life in a world where humans populate its natural homeland? If we modify the organism to the extent that it will become suitable, do those genetic changes render the new organism so different that we might as well not have bothered bringing them back from extinction?

We don't have to argue this issue entirely within the realm of genetic engineering; let's look at classic cars for a moment. There were several cars built in the late 1960s which were considered the pinnacle of muscle car development. Many collectors today shell out tens of thousands of dollars for an authentic example of an "all original" Pontiac Firebird, for example. Now, you can just as easily go to a catalog company called Year One, and purchase reproduction parts to fix up even the worst junkyard Firebird. Year One will even sell you a fully-built classic car copy (take your choice from any of several models) made in their factory from parts they reproduced. The repro car will effectively be brand spanking new, ready to embark on a 50-year career of cruising (albeit with unleaded fuel and a catalytic convertor!) You probably wouldn't dare to take the authentic, all-original version out on the road - if you wanted to take it to a car show, you'd trailer it! Even if they both cost the same amount, the choice of car would come down to your desired use, right? Clearly, the cars can't be considered identical, no matter how much they might look alike. Ask any devoted collector of cars or motorcycles; "all-original" means exactly that, and no reproduction parts will do. Some purists won't even accept a replacement part which genuinely came from another old car of the same year/model (most collectors will accept minor replacements, such as taillight lenses, but each replacement reduces perceived value).

Another product that is subjected to close scrutiny for authentic original condition is the vintage guitar and/or amplifier. Many guitars from the early years of electrification were sold with an amp and a case, all as a set; if you have the wrong case, or if the speaker has been replaced in the amp, the value of the set is substantially lower. If the finish on the guitar has cracked or worn away, it's best to leave it untouched, because even the best repair work destroys the perceived authenticity of the instrument. If you run across an antique tube amp in someone's attic, don't clean the patina from the control panel, or try to remove stains from the tweed cloth covering - it's all worth more "as is" than it will ever be worth AFTER a scrub job! Don't change the tubes (or the filter capacitors, how ever dried out and useless they may have become); a serious collector cherishes the evidence of the product's "history" as much as the product itself! Clearly, collectors belong to the group that held that Theseus' ship wasn't really his ship, after all. This extends to collectors of the actual vacuum tubes themselves. Find a NOS (New, Old Stock) Telefunken 12AX7 dual triode tube in its original box, and you can command up to 20 times the price of a Sovtec 12AX7 made last month! If you want an amp to play

through at tonight's gig, purchase a quality modern repro from one of dozens of boutique builders across the country (they can build to original specification, or imitate the gradual shift in component values that comes with time to create a new amp that sounds like it's 70 years old). Even a highly-customized repro amp costs far less than an original vintage amp, and if someone spills a beer on it, you won't be half as heartbroken.

Practical people, then, are more inclined to accept the reproduction. You get some of the coolness of a product that LOOKS just like a classic (some artistic types will even "distress" a new product to make it look old and abused), but you don't have to put it right in the environment-controlled display case in your museum. You can get a repro with original specs, or have it customized to meet modern safety standards (chassis-grounded three-prong plugs, for example), to include subsequent improvements in technology (why not get power steering, power disc brakes, air suspension, and digital ignition on your repro muscle car?), or to just triple the power rating!

Which brings me to the "value" aspect of Theseus' Paradox; if the recreated product is truly different than the original, which is in fact "better?" I'd rather have an intact, seaworthy ship made of inauthentic repro parts than an authentic pile of rotted wood mush, wouldn't you? I'd expect that the Greeks felt the same way, since they reproduced the ship as it aged. To hold such high esteem for pure originality smacks of quasi-religious idolatry, if the only thing that matters is that this is THE specific physical object which hails from a time long past. Yet, in the scenario of the biological organisms discussed earlier, it's clearly better to have a sheep that can survive and reproduce, while also producing several years' worth of wool, than to have Dolly's defective corpse in a huge jar of embalming fluid, unless my purpose for purchasing Dolly was to display her in the Barnum & Bailey sideshow tent. In the case of our younger anti-GMO activist generation, I'd say that they might prefer "spots on the apples, but leave us the birds and the bees, please" ("Big Yellow Taxi," by Joni Mitchell). There's a sort of aesthetic point to leaving Paradise unpaved, despite any lack of parking that may cause.

As with most of the value-based decisions we have to make every day, the choice of which option we prefer often comes down to the values we have already chosen. It is essentially conservative to prefer what one has always had, and essentially progressive to seek to improve on the old. Sometimes the same person will be conservative in making one choice, and progressive in making the next. From the purist point of view, authenticity cannot be reproduced, but that doesn't necessarily mean that authentic is always better.

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## Book Review

# Saxons, Vikings, and Celts: The Genetic Roots of Britain and Ireland

by **Bryan Sykes**, (Oxford University geneticist)

**2006 ISBN: 978-0-393-33075-5 paperback, \$16.95**

**Pubr: W.W. Norton & Company, Inc./500 Fifth Ave./New York, NY 10110**

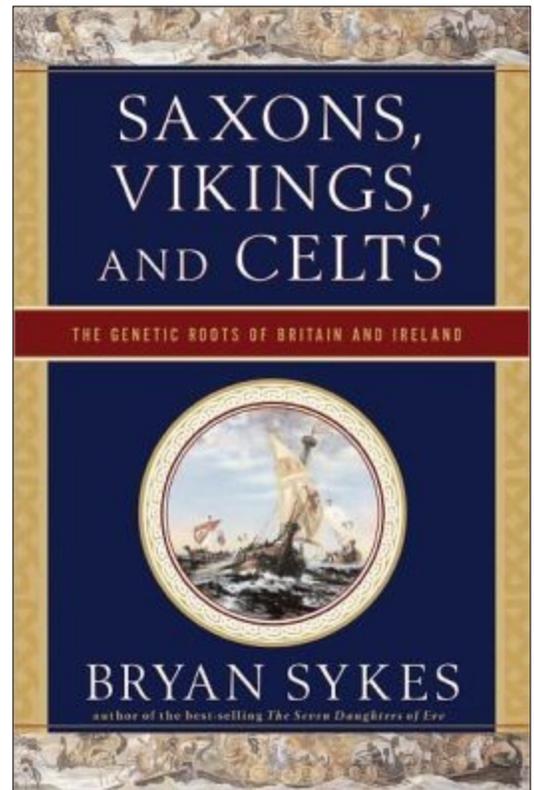
This 306-pp. book was a fascinating read. Sykes deeply simplifies the genetic science aspects of his subject for lay readers, while still providing sufficient explanation to make what he has accomplished with his Oxford Genetic Atlas Project clear enough and useful for even moderate anthropologic study. The book could have been a slender pamphlet, but Sykes is also a storyteller who provides both the origins mythologies and recorded histories of the cultures he studied. Anyone with even a marginal interest in human history and our genetic heritages will find this book valuable. If the reader is descended from one of the several peoples of the British Isles, that personal link will only make it more compelling.

What Sykes calls "the Isles" encompasses Britain, Wales, Scotland, Ireland, the Hebrides, Orkney, and Shetland. His project set out to map the genetic heritage of the current "native" population (mostly ignoring recent immigrants from former British colonies, etc.), using the highly sensitive modern DNA techniques to identify genes in detail. He compares the Islanders' genetic fingerprints with others drawn from Europe, Scandinavia, Iceland, and even the Mediterranean and Africa, seeking to identify groups he calls "clans." Of 36 clans of maternal lineage worldwide, and 21 clans of paternal lineage, he identifies (and assigns personal names to) 7 female, and 5 male, lineages which are dominant in his target region. He sampled tens of thousands of people to obtain their DNA fingerprints, region by region, and statistically analyzed the results to determine the relative proportions of these clan groups in each of nearly two dozen specific regions of the Isles. Ireland alone is broken into four regions, and as with all of the regions he studied, the results (which you will have to read his book to learn) identify the heritage of residents with remarkable certainty. He then goes even deeper into the genome, breaking each of the clans apart to identify and map each individual mutation of the DNA. In the end, his methods can be so precise as to capture heritage "groups" of one, two, or three tested subjects, locating them with dots on a map.

Interspersed with his surveys of each region, Sykes offers the region's specific mythological and historical heritage, as well. An adept historian, Sykes traces the Isles from long before the last Ice Age (when inhabitants were a non-human species), catalogs the archaeological evidence of both skeletal and artifact remains along the way, and finally analyzes the (often complex) relationship of mythologies to their subsequent political manipulators. Most of the written history of the Isles begins with the Roman invasion/occupation, and Sykes outlines that as well. He covers the Viking raids, the Saxon conquest, and the Norman conquest, as well as the many tribal conquests within the Isles themselves.

If one hopes to find in this book support for notions of some "master race," he'll be disappointed. Sykes goes to great pains to simply describe biological heritage, leaving comparative judgements out of the picture. He does a remarkably good job of avoiding the temptation to take sides, even in the more modern conflicts of the region, though he does list them for clarity.

Whether one reads this book for the genetic discussions, for the mythological stories it collects, or for the historical and cultural identities it addresses, no special education or training is needed to enjoy the entire book. But if you want a basic guide to the Celts and the Picts, the hunter-gatherers and the earliest farmers, or even the seagoing adventurers of the eastern Atlantic from the mists of prehistory, this book is a great place to start.



Related material:

\* DNA USA: A Genetic Portrait of America, by Bryan Sykes

- \* Adam's Curse: A Future Without Men, by Bryan Sykes
- \* The Seven Daughters of Eve: The Science That Reveals Our Genetic Ancestry, by Bryan Sykes
- \* Oxford Ancestors ([www.oxfordancestors.com](http://www.oxfordancestors.com)), a commercial genetic analysis service for public access, spun off from Sykes's work
- \* [www.bloodoftheisles.net](http://www.bloodoftheisles.net), a website listing details of Sykes's data

NOTE from PS3: This book predates many of the recent discoveries in human evolutionary development. For example, Sykes sees no evidence of the Neanderthals within the section of DNA which he examines, but we now know that everyone with a post-African diaspora heritage carries a small percentage of Neanderthal DNA, indicating interbreeding with this related hominid species while humans spread across the planet. Also, the Denisovan hominids, known from only a few hard specimens, left DNA markers in many modern humans, perhaps including some of the Islanders Sykes studied. The book remains recent enough to be valuable for serious study.

Reviewed by Paul Schlueter III



# PHACT CALENDAR

## PhACT Events



**Dr. David Cattell, Chairman of the Physics Department of Community College of Philadelphia** hosts meetings of PhACT - at 2:00 PM on the third Saturday of most months at Community College of Philadelphia.., Parking is easily available and costs \$4.00 for all day. Enter the college parking lot on 17th Street which is one way south bound. This meeting site is handicap accessible. **PhACT Meetings are Free and open to the public unless otherwise noted.**

**Saturday, September 20, 2014 at 2:00 PM - Lecture**

**Paul Brewer, Professor of Political Science at University of Delaware** will discuss his book **“Back off, man--I’m a scientist”**: The effects of media messages on public perceptions of paranormal research and phenomena

**Saturday, October 18, 2014 at 2:00 PM - Lecture**

**Professor Barry Vacker** will discuss his book **“The End of the World — Again: Why the Apocalypse Meme Replicates in Media, Science, and Culture”**

**Saturday, November 15, 2014 at 2:00 PM - Lecture**

**“Neuroethics: the Perils and Potential of Brain Science”**

**Ted Schick, Professor of Philosophy at Muhlenberg College,** will discuss **Neuroethics: the Perils and Potential of Brain Science.**

**Saturday, January 17, 2015 at 2:00 PM - TBA**

**Saturday, February 21, 2015 at 2:00 PM - TBA**

**Saturday, March 21, 2015 at 2:00 PM - TBA**

**Saturday, April 18, 2015 at 2:00 PM - TBA**

**Saturday, May 16, 2015 at 10:00 AM - PhACT Expedition to the Mullica River to search for the Jersey Devil.**

The **PhACT Calendar** is open to members and non-members who wish to announce meetings and events of other groups of which they are interested or affiliated. These events should be of some general interest to the Skeptical or Scientific community and should be within a reasonable radius of Philadelphia. Send submissions to the editor at [phactpublicity@aol.com](mailto:phactpublicity@aol.com). Keep the announcements brief. Space is limited and insertions will be made on a first come-first served basis after the needs of PhACT are accomplished. Phactum does not accept paid advertising.



**The Philadelphia Area Center for the History of Science (PACHS)** maintains an extensive calendar of events about the history of science, technology and medicine that may contain some interesting events not listed in the Phactum Calendar. Check out their website at:

<http://www.pachs.net/events>

**Monday, September 8, 2014 at 6:00 p.m at National Mechanics, 22 S. Third Street, Philadelphia, PA 19106**

#### Science on Tap

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is hosted by the Wagner Free Institute of Science. Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontaphilly.com/>

**Tuesday, September 9, 2014 at 6:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200**

<http://www.thelaurelhilccemetery.org>

#### EDGAR ALLAN POE: DEEP INTO THAT DARKNESS

While Edgar Allan Poe is a beloved son claimed by at least five other US cities, it cannot be denied that he flourished in Philadelphia. From 1838 through 1844, he produced some of his best known and most haunting works including "The Tell-Tale Heart," "The Pit and the Pendulum," and "The Fall of the House of Usher." While no written proof of such has yet been uncovered, many have speculated that Poe's tales may have been inspired amidst the graves and gardens of Laurel Hill Cemetery. Newly opened when Poe took up residence in the city, the famed necropolis could draw more than 150,000 visitors in one season alone... Surely, Poe could well have been among those curious souls. This walking tour of Laurel Hill will focus on what history has revealed to us of Poe's time in Philadelphia – on the literature he produced, and of the friends, associates and enemies who traveled within his circles, many of whom now reside permanently at Laurel Hill.

With the stirring of fall and Halloween on the horizon, this is a fitting time to summon the stories of the Master of the Macabre. Bring your own flashlights. The tour will conclude with wine and beer.

The tour will take place on Tuesday, September 9 at 6:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822

Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$20/person; or \$18/students and seniors. Reservations are suggested. Tickets can be purchased at the door, in advance by phone (215) 228-8200, or online.

Guide(s): Carol Yaster & Dave Horwitz

**Wednesday, September 10, 2014 at 7:00 PM at Frankford Hall on Frankford Avenue just north of Girard Avenue.**

#### Philadelphia Nerd Nite ... be there and be square, yo.

Science discussions, good food, good company, and plenty of beer!

For more information see the website at

<http://philadelphia.nerdnite.com/updates/>

Open to the Public. Admission \$5.00

Email us at: [nerdnitephilly@gmail.com](mailto:nerdnitephilly@gmail.com)

**Wednesday, September 10, 2014 - 5:30pm at the American Philosophical Society, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia**

<http://www.amphilsoc.org/>

#### Trespassing on Einstein's Lawn: A Father, a Daughter, the Meaning of Nothing, and the Beginning of Everything

##### Lecture, Reception, and Book Signing

**Amanda Gelter** is a physics writer and consultant for New Scientist magazine, where she previously served as Books & Arts editor and founded CultureLab, New Scientist's books and arts blog. She is a 2012-13 MIT Knight Science Journalism Fellow, and her writing has appeared in Scientific American, Forbes, and The Philadelphia Inquirer. Trespassing on Einstein's Lawn is a spirited and personal account of a father/daughter quest for answers to the universe's biggest questions.

Free and Open to the Public

**to register:** <http://www.amphilsoc.org/node/2276>

**Wednesday, September 10, 2014 at 7:15 PM at the Fels Planetarium, The Franklin Institute, 222 North 20th Street,**

Philadelphia, PA 19103

**The Rittenhouse Astronomical Society**

Astronomy lecture open to the General Public. See website for more details:

[www.rittenhouseastronomicalsociety.org/](http://www.rittenhouseastronomicalsociety.org/)

**Thursday, September 11, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103**

<http://libwww.freelibrary.org/authorevents/>

#### Ken Burns and Geoffrey C. Ward | The Roosevelts: An Intimate History

In conversation with Tracey Matisak

"Not only the greatest documentarian of the day, but also the most influential filmmaker period" (The Baltimore Sun), **Ken Burns** has opened the doors of American history for millions of people. With an intimately personal yet grand style of storytelling, his films have resurrected the people and events both mythologized and lost to history. His documentaries include Baseball, Jazz, The Dustbowl, Brooklyn Bridge, and the landmark series The Civil War. His films have won 12 Emmy Awards and have twice been nominated for Oscars. A seven-part program that follows Theodore, Franklin, and Eleanor Roosevelt for more than a century, Burns's new series airs on PBS this fall.

**Geoffrey C. Ward**, Burns' longtime collaborator, is the principal writer of The Civil War, Jazz, Baseball, and 13 other of the director's PBS documentaries. For his work he has won seven Emmy Awards. Ward is also author of A First-Class Temperament: The Emergence of Franklin Roosevelt, winner of the 1989 National Book Critics Circle Award for biography, as well as more than a dozen other books whose themes range from East Indian culture to Mark Twain.

Meelya Gordon Memorial Lecture

Cost: \$15 General Admission, \$7 Students

Buy tickets online

**Thursday, September 11, 2014 - 7:00pm to 10:00pm** at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

**Night Skies in the Joel N. Bloom Observatory**

**SOCRATES CAFE** is moderated by: Lewis Mifsud, Ph.D., P.E., a member of PhACT and of The American Academy of Forensic Sciences. At 7:00 PM every Monday evening except holidays (on Tuesdays after a Monday holiday) at the Springfield Township Public Library (215-836-5300) at 1600 Papermill Mill Road, Wyndmoor, PA. 19038. This philosophical discussion group is free and open to the public. Join us and share your critical thinking, questions and opinions.



Hosted by Franklin Institute Chief Astronomer Derrick Pitts, Night Skies in the Observatory is a monthly stargazing event held in the Joel N. Bloom Observatory. View celestial objects in the night sky, including stars, planets, nebulae, and if conditions are right, a galaxy or two, from 5 different rooftop telescopes in the Observatory. The evening includes a Fels Planetarium show and a lecture or presentation (appropriate for ages 8 and up) on an astronomical or space science topic. The Observatory is staffed with knowledgeable observers and free star maps are provided.

Ticket Prices: \$5.00 Per Person, Free for Members

**September 12, 2014 at 7:00 PM** in the Radnor Township Municipal Building, 301 Iven Ave, Radnor, Pennsylvania 19087

**Delaware Valley Amateur Astronomers**

**"Is Vesta a Protoplanet? (Probably not!)"**

**Brother Guy Consolmagno - Astronomer, Author, Vatican Scientist.**

<http://dvaa.org/php/page.php?body=Events>

Free and Open to the Public.

Refreshments are provided. A sales table and library are also available.

**Friday September 12, Saturday September 13, Friday September 19 and Saturday September 20, 2014 AT 7:30 pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

**THE WAY OF ALL FLESH (SHOW): A GRAVEYARD CABARET**

The show that Philadelphia City Paper calls "pretty damn ideal" and "A TOTAL BLAST" is back (from the dead) by popular demand. After rave reviews from audiences and critics alike and selling out multiple shows, New York-based REV Theatre Company will return to Laurel Hill Cemetery to again delight the crowd. Re-conceived and re-created by REV's Co-Artistic Director, Rudy Caporaso and directed by Co-Artistic Director, Rosey Hay; The Way of All Flesh (Show) features Felicia Anderton, Denise Shubin and Rudy Caporaso as three witty and mysterious souls departing for their journey between this world and the next. Musically directed by Rob Borchert, the show includes music from Bessie Smith to The Scissors Sisters, from Cab Calloway to Nirvana and more. Join us for a haunting evening: sip free cocktails as darkness falls and wait for the (singing) souls to appear through the mists of Laurel Hill Cemetery for a toe-tapping, spine-tingling good time. This program will be presented as part of the 2014 Philly Fringe Festival. An exhibition of unique and production-centric paintings by Matt VanAlstine and sculptures by Cait Stoddard will be on display and available for purchase in the Gatehouse.

SEE a sailor lost at sea as his widow drowns in a bathtub. MARVEL as a murderous little girl pleads for the electric chair. BEWARE because a serial-killer looks for his next victim! So come back indeed and enjoy yourself...it's (still) later than you think!!! Bring your own blankets or

beach chairs, picnics, and/or beverages.

Four performances of The Way of All Flesh (Show) are scheduled at Laurel Hill Cemetery: Friday September 12, Saturday September 13, Friday September 19 and Saturday September 20 (with prescheduled rain dates of Sunday, September 14 or Sunday, September 21.) All performances begin at 7:30pm, and will kick off with cocktails at 7:15pm. Ticket holders can check in at Laurel Hill Cemetery's Gatehouse entrance, 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot directly across the street from the Gatehouse.

The cost for the program is \$20/person general admission. Advance reservations are requested. Tickets can be purchased at the door, or through the Fringe Festival Box Office.

**Sunday, September 14, 2014 at 1:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

**THE ROCKET'S RED GLARE: THE WAR OF 1812 AND LAUREL HILL CEMETERY**

This September marks the 200th anniversary of the Bombardment of Fort McHenry, Baltimore, by the British during the War of 1812. This distant historical event is forever etched on the national consciousness through "The Star Spangled Banner." The "bombs bursting in air" were quite literal and gave hope to an embattled nation in the midst of what is known as "America's Second Revolutionary War." Come hear the stories Laurel Hill's War of 1812 veterans who fought, bled, and died in what was critical but often forgotten war.

This walking tour will take place on Sunday, September 14 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Tickets can be purchased at the door, in advance by phone (215) 228-8200, or online.

Guide: Russ Dodge

**Tuesday, September 16, 2014 at 7:30PM** at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

**Cristin O'Keefe Aptowicz | Dr. Mutter's Marvels: A True Tale of Intrigue and Innovation at the Dawn of Modern Medicine**

In conversation with F. Michael Angelo, M.A., University Archivist and Head of Historic Collections, Thomas Jefferson University Granted unprecedented access to Philadelphia's famous museum of medical oddities, specimens, and antique medical equipment, Cristin O'Keefe Aptowicz has penned an in-depth and revelatory biography of its eccentric and brilliant founder, Thomas Dent Mutter. Once described as the "P.T. Barnum of the surgery room," the flamboyant and forward-thinking Mutter helped established Philadelphia as the epicenter for global medical innovation. A museum exhibit based on the book will open on the same day as the book's release. Aptowicz is also the author of

six books of poetry, as well as another book of nonfiction, Words in Your Face: Twenty Years of the New York City Poetry Slam.

FREE

**Wednesday, September 17, 2014 at Noon** at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

Food & Thought Lecture: "Postwar Urban America: Any More Detroit?"

The talk will be an economic survey of major American urban areas since 1950 and a more detailed examination of recent trends in Detroit, Philadelphia, New York, and Chicago. The City of Detroit declared bankruptcy in 2013. Are there any more Detroit on the horizon? Cities have been recovering from the great recession, but progress has been uneven - greater in downtown than in the rest of the city. Is the picture truly as "rosy" as the Sunday supplements portray?

Speaker: John F. McDonald, Emeritus professor of Economics, University of Illinois at Chicago, David Ricardo Medal, American Real Estate Society, 2013.

Cost: \$13 includes lunch

[http://www.coliphphil.org/prog\\_calendar.htm](http://www.coliphphil.org/prog_calendar.htm)

Pre-registration for all programs and events is strongly urged. For further information regarding events and registration, please e-mail [info@collegeofphysicians.org](mailto:info@collegeofphysicians.org) or call 215-399-2341.

**Thursday, September 18, 2014 at 6:30 PM** at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

[http://www.coliphphil.org/prog\\_calendar.htm](http://www.coliphphil.org/prog_calendar.htm)

**Ignorant was Bliss: How the Medical Community Abetted the Assassination of a President**

In July of 1881, James A. Garfield, the 20th President of the United States, was struck in the flank by an assassins bullet. Death would not come for 80 days and was due in large part to the complications of infection introduced by the caregivers tasked with saving his life. His case was instrumental in the widespread adoption of Listerian principles in this country. His story is recounted in this lecture.

Speaker: Michael L. Nance, MD, FACS, FAAP, FCPP is Director, Pediatric Trauma Program, Children's Hospital of Philadelphia; Professor of Surgery and Josephine J. and John M. Templeton Jr. Chair in Pediatric Trauma, Perelman School of Medicine, University of Pennsylvania

Sponsored by the College's Section on Medical History

Cost: \$10.00

Pre-registration for all programs and events is strongly urged. For further information regarding events and registration, please e-mail [info@collegeofphysicians.org](mailto:info@collegeofphysicians.org) or call 215-399-2341.

## PhACT Lecture

**Saturday, September 20, 2014 at 2:00 PM**

**Paul Brewer, Professor of Political Science at University of Delaware will discuss his book “Back off, man—I’m a scientist”: The effects of media messages on public perceptions of paranormal research and phenomena**

**Sunday, September 21, 2014 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200**

<http://www.thelaurelhillcemetery.org>

**BURIED IN THE LAND OF STRANGERS: CONFEDERATES OF LAUREL HILL**

Fate denied them victory, but gave them immortality. Historians widely agree that 1864 spelled the beginning of the end for the Confederacy. From the farthest corners of the South, boys who had left for war became men, men who had left for war perished; and the long slog to 1865 began. In the end, though their hearts and loyalty were in the South, many Confederate soldiers found themselves buried far above the Mason Dixon line. The general who was blamed for the surrender at Vicksburg, the Confederate spy who came in from the cold, the soldier who spent long days as a prisoner of war; all were buried in a land of strangers at Philadelphia's Laurel Hill Cemetery. Learn the curious history of Philadelphians who joined the Confederacy: who they were, why they fought, and how they ended up so very far from the place they considered home.



This walking tour will take place on Sunday, September 21 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Tickets can be purchased at the door, in advance by phone (215) 228-8200, or online.

Guide: Sam Ricks

**Tuesday, September 23, 2014** at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org> Tel: 215-925-

2222

**Brown Bag Lecture: “The History of Chemistry in 30 Minutes Flat”**

**A talk by William Brock**

Although Partington and many other historians have published “short” histories of chemistry, they are all quite detailed and extensive. How, then, does one go about writing “A Very Short Introduction to the History of Chemistry” for a general public? What can be ignored? What must be included? What are the essential themes? Brock will use his talk to share his own approach to tackling such questions.

Free and Open to the Public

**Wednesday, September 24, 2014 from 6-7:30 PM** at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

[www.wagnerfreeinstitute.org](http://www.wagnerfreeinstitute.org) ph 215-763-6529

**Organizing Nature: Joseph Leidy and the Design of the Wagner Free Institute of Science**

- An illustrated presentation by Susan Glassman, Executive Director, Wagner Free Institute of Science In the 19th century, Philadelphia was the nation's center of scientific research and education, and at its center stood Dr. Joseph Leidy (1823–1891), a research scientist of astounding versatility. He made crucial discoveries in a wide range of fields, including anatomy, botany, and parasitology. He was among the foremost microscopists of his time and is considered the founder of American vertebrate paleontology.

Less well known is Leidy's influence as a teacher. He had a lasting impact on generations of scientists and the institutions he served. His hand is particularly evident at the Wagner, whose museum he transformed into a systematic display specifically designed for teaching. Completed in 1891 and nearly unchanged today, the Exhibition Hall he designed is the only place where Leidy's work as a curator and educator can be experienced directly.

Susan Glassman, Executive Director of the Wagner, will discuss Leidy's legacy—his influence in Philadelphia and his contributions to teaching, research and exhibitions at the Wagner Free Institute of Science.

Wednesday, October 8, 2014, 6-8PM - Philadelphia Lantern Slide Salon - Part of Archives Month Philly, the salon showcases historic glass lantern slides from the collections of some of the region's most significant cultural and educational institutions projected in the Wagner's Victorian era lecture hall. Free and Open to the Public

**Friday, September 26, 2014 at 10:00 AM** at **Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200**

<http://www.thelaurelhillcemetery.org>

**Hot Spots and Storied Plots Flyer**

**MONTHLY FOURTH FRIDAY TOUR SERIES: HOT SPOTS and STORIED PLOTS**

In life and in death, we all have stories to tell. Join Laurel Hill Cemetery for an informative

overview of Laurel Hill's long and colorful history, which will include many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. This is the perfect tour for first-time visitors to Laurel Hill, and anyone else who enjoys beautiful art, scenic nature and fascinating history. “Hot Spots and Storied Plots” will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday tour series, which take place on the fourth Friday of every month at 10:00am.

September's walking tour will take place on Friday, September 26, 2014 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$8/person general admission. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Kerry Bryan

**Saturday, September 27, 2014 AT 5:30** at **Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200**

<http://www.thelaurelhillcemetery.org>

**MUSIC FOR THE HEARING EYE: CONCERT ATOP THE CRYPTS the Divine Hand Ensemble performs**

With the rustling of copper colored leaves and crisp fall air comes an opportunity to enjoy the enrapturing melodies of the Divine Hand Ensemble. In the fall of 2012, their performance comprised the first time in 250 years that a program of funerary music was performed publicly and the first time ever in America. This fall, the Ensemble will be returning to Laurel Hill to enchant and delight with music unlike any other now being performed. Witness Mano Divina, leader of the Ensemble, harness electricity with his fingertips and draw music out of the air as master of the Theremin, an early electronic musical instrument controlled without discernible physical contact from the player. In addition to this rare instrument, the Ensemble includes a string quartet, classical guitar, two harps, a glockenspiel, a soprano and a tenor, together rendering an unforgettable listening experience. Bring your own blankets or beach chairs, picnics, and/or beverages.

The Divine Hand Ensemble's music has been described as hypnotic, breathtaking and mesmerizing, an “amalgamation of magic, science and music.” The International Review Board notes them as “a must-see experience that will leave a remarkable impression for a lifetime.” There are thus few more appropriately ethereal settings to take in the power of this performance than historic Laurel Hill Cemetery, where the Ensemble will be performing a selection of contemporary and classical compositions for the twenty-first century audience.

This sunset concert will take place on Saturday, September 27 at 5:30pm, (with a prescheduled rain date of Sunday, September 28 at 5:30pm.) Gates open at 4:30pm. Ticket holders can check in at Laurel Hill Cemetery's

Gatehouse entrance, 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot directly across the street from the Gatehouse.

The cost is \$20/person general admission. Advance reservations are requested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

#### ABOUT THE DIVINE HAND ENSEMBLE

Mano Divina is a professional concert Thereminist, performing classical compositions, chamber music, opera arias and sacred choral music with his 8 piece string orchestra, The Divine Hand Ensemble. Their international performances of Theremin music are played with such precision, grace and elegance that it touches the audience with an ethereal calm, moving them to emotion with its beauty.



**Monday, September 29, 2014 at 7:00 PM** at MaGerks Pub and Grill, 582 South Bethlehem Pike, Fort Washington, Pennsylvania 19034.

**American Revolution Round Table of Philadelphia**, <http://arrtop.com/>

**Dr. Samuel A. Forman on his book Dr. Joseph Warren: The Boston Tea Party, Bunker Hill, and the Birth of American Liberty.** He will be coming from the Boston area to give this talk.

**Monday, September 29, 2014 at 7:30PM**

**Henry Kissinger | World Order**

In conversation with Jeff Greenfield

“No one can lay claim to so much influence on the shaping of foreign policy over the past 50 years as Henry Kissinger” (The Financial Times). A vital presence in international and national politics since the 1950s and named one of Foreign Policy Magazine’s “Top 100 Global Thinkers,” Kissinger served as Secretary of State under Presidents Nixon and Ford and as National Security Advisor for six years. A key negotiator for the withdrawal of American forces from Vietnam, he won the Nobel Peace Prize in 1973. Countless other honors include the Presidential Medal of Freedom and the Medal of Liberty. His new book is a shrewd analysis of the challenges of building international order in a world of differing perspectives, violent conflict, burgeoning technology, and ideological extremism.

Horace W. Goldsmith Endowed Lecture

Cost: \$15 General Admission, \$7 Students

Buy tickets online.

**Tuesday, September 30, 2014 at 12:00 to 1:00 PM** at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org> Tel: 215-925-2222

**Brown Bag Lecture: “Emil Fischer’s Dream: A ‘Synthetic-Chemical Biology’ in the Early 20th Century”**

**A talk by Jeffrey Johnson**

In 1915 the German Nobel laureate Emil Fischer

visualized, “half in a dream, the emergence of a synthetic-chemical biology that will transform the living world as fundamentally as chemistry, physics, and industry have done for so long with non-living nature.” It will be the purpose of this presentation to show the theoretical and experimental context of that vision, which arose from Fischer’s decades-long quest to synthesize the fundamental molecules of life and from his understanding of the implications of the contemporaneous work of other chemists and biologists. By 1913 Fischer had begun to experiment with the nucleic acids and to consider the possibility of creating synthetic genes in order to modify “lower” life forms. World War I put an end to Fischer’s project, and his hopes were premature, but the presentation will outline some of the immediate and longer-term cultural and scientific impacts of his vision, culminating in the emergence of synthetic biology, which is bringing Fischer’s dream much closer to reality. Free and Open to the Public

**Tuesday, September 30, 2014 at 6:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

#### SPIRITS AND SPIRITUALISTS

In the 19th century, thousands of Philadelphians believed that they could communicate with the dead. All that it took was a darkened room, a circle of believers, and a sensitive medium. Other Philadelphians mocked the table-rappers and tried to expose their tricks. Both believers and skeptics are well represented in historic Laurel Hill Cemetery. Along this tour, we will stop at the resting place of Catherine Drinkhouse Smith, whose monument proclaims her as “one of the best mediums of her time,” and at the grave of Adam Seybert, whose last will and testament allocated a large sum to the University of Pennsylvania for a study of the truths of spiritualism. We will also visit the grave of Horace H. Furness, the Shakespeare scholar who led an official inquiry into the claims of spiritualists, and at the hillside tomb of Elisha Kent Kane, the famed Arctic explorer who scoffed at spiritualism but who fell in love with America’s most beautiful young medium.

The tour will take place on Tuesday, September 30 at 6:00pm, departing from Laurel Hill Cemetery’s Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Michael Brooks

**Tuesday, September 30, 2014 at 6:15 pm** at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

**Evening Lecture**

**The Diplomat, the Dealer, and the Digger: Writing the History of the Antiquities Trade in 19th-Century Greece**

Relatively little is known today about the ways in which the antiquities trade was organized in 19th-century Europe. In this lecture, Dr. Yannis Galanakis, Lecturer in Greek Prehistory, University of Cambridge, explores how the commodification of the past became inextricably interwoven with power politics, and gave rise to different collecting attitudes and debates on cultural property, ownership, and the value of things in the modern world. Sponsored by the American Institute of Archaeology. Free admission.

**Wednesday, October 1, 2014 at 5:30 pm** at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

[http://www.colphyphil.org/prog\\_calendar.htm](http://www.colphyphil.org/prog_calendar.htm)

**Grandma’s Remedies: Cross-Cultural and Historical Use of Herbs From Kerala, India**

Jacob Thomas, PhD, Deputy Director of Living Collections at The Barnes Foundation, will discuss a variety of plants grown in Kerala, India for traditional herbal medicine.

This lecture is the fourth in a series presented by The College of Physicians of Philadelphia in partnership with the Pennsylvania Horticultural Society.

Cost \$25.00

Pre-registration for all programs and events is strongly urged. For further information regarding events and registration, please e-mail [info@collegeofphysicians.org](mailto:info@collegeofphysicians.org) or call 215-399-2341.

**Wednesday, October 1, 2014 at 7:30PM** at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

**Steven Pinker | A Sense of Style: A Writing Guide for the 21st Century**

“Sweeping, erudite, sharply argued, and fun to read” (Time), cognitive scientist and linguist Steven Pinker has charted the way humans form thoughts and engage the world through a wide array of scientific research, scholarly writing, popular books, and magazine articles. These bestsellers include *The Better Angels of our Nature*, *The Language Instinct*, and Pulitzer Prize finalists *The Blank Slate* and *How the Mind Works*. In 2010 and 2011 he was named to Foreign Policy magazine’s list of top global thinkers. Pinker’s new book explores the ways in which the English language is being corrupted by texting and social media in order to propose practical guidelines for crafting useful, elegant prose.

Cost: \$15 General Admission, \$7 Students

Buy tickets online

**Wednesday, October 1, 2014 at 6:00 pm** at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

**Great Wonders Lecture Series**

**The Great Sphinx and the Pyramids of Giza**

Dr. David Silverman, Curator-in-Charge, Penn Museum, Egyptian Section, presents the opening



## Calling All Astronomers! Rittenhouse Astronomical Society

**Monthly Meetings! Bring all of your out-of-this-world questions!** Join The Rittenhouse Astronomical Society the second Wednesday of each month at 7:30 p.m. in the Fels Planetarium at the Franklin Institute. The society offers all persons an opportunity to participate in the activities of an astronomical group at the laymen's level. They aim to spread knowledge, awareness and enjoyment of astronomy and astronomical issues. It is a popular science club that keeps its members up-to-date on the latest developments. No experience is necessary to attend the FREE meetings. Come with your astronomy questions!

[www.rittenhouseastronomicalsociety.org/](http://www.rittenhouseastronomicalsociety.org/)

lecture in the Great Wonders Lecture Series. The most recognized of the Seven Wonders of the Ancient World, Giza's pyramids and Sphinx have fascinated humankind for more than 5,500 years. At 240 feet long and almost 70 feet high, the Sphinx is Egypt's largest statue; at a height of 481 feet, the Great Pyramid was the world's tallest built structure for several thousand years. Many questions, debates, and theories focus on their purpose, age, origin, and creators. Did indigenous peoples, slaves, or ancient aliens build them? Did secret chambers lie within? Could pyramids magically preserve their contents? Did the elements in the solar system guide their placement on the Giza plateau?

Sign up for a series subscription and save! \$40, general public; \$15, Penn Museum members. Individual lecture with advance registration: \$5, general public; \$2, Museum members; \$10 at the door based on availability. For more information, call 215.898.2680. To register, visit [www.penn.museum/greatwonders](http://www.penn.museum/greatwonders).

**Thursday, October 2, 2014 at 12:30 pm** at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

### Brown Bag Lecture

#### Wampum in Museum Collections: Tracking Broken Chains of Custody

Wampum belts are identified by federal legislation as iconic items of indigenous cultural patrimony, yet wampum in museum collections often appears to be only vaguely identifiable. For decades, collectors and curators represented these wampum belts as valuable antiquities, abstract art objects, and relics of vanished Indians—false representations that concealed historical origins and encouraged the physical alienation of tribal patrimony. In this lecture, Dr. Margaret Bruchac (Abenaki), Assistant Professor of Anthropology, University of Pennsylvania, combines archival research with Indigenous consultation to recover far more coherent understandings of colonial events and Indigenous objects, past and present. Presented by the Penn Cultural Heritage Center. Free admission.

**Saturday, October 4, 2014 at 8:00pm** at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

#### CINEMA IN THE CEMETERY

Sit back and relax with a drink, some popcorn and friends on this fall movie night under the stars. After the sun sets, the grainy joys of the

film experience will be brought to audiences amid the historic tombs of Laurel Hill Cemetery. This Halloween season, there is no better place to enjoy a creepy cult classic film. Bring your own blankets or beach chairs, picnics, and/or beverages.

Don't forget your wallets! Spot Burger food truck will be on-site with juicy burgers, tasty fries and all of your concession needs.

The screening will take place on Saturday, October 4 at 8:00pm (with a pre-scheduled rain date of Saturday, October 25 at 8:00pm). Gates open at 7pm. Ticket holders can check in at Laurel Hill Cemetery's Gatehouse entrance, 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot directly across the street from the Gatehouse.

The cost is \$10/person general admission. Purchasing advance tickets is suggested. Tickets can be purchased at the door, by phone (215) 228-8200 or online.

**Sunday, October 5, 2014 at 1:00 PM** at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

#### GROOVIN' IN THE GRAVEYARD: KIDS' CONCERT and FAMILY FUN

Enjoy a family friendly concert by "Ratboy Jr." outdoors amid the crisp autumn air, bright blue skies and brilliant fall foliage that abounds in Laurel Hill Cemetery! Children are encouraged to come dressed in Halloween costumes, and to show them off during the performance. Round out the day with art activities and our pumpkin patch. This program is recommended for families with children ages 4-12. Light snacks and Halloween goodies will be available. **BYO** blankets, beach chairs and picnics!

The program will take place on Sunday, October 5, beginning promptly at 1:00pm and concluding at 3:00pm. Visitors may enter via Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$5/person general admission. Tickets can be purchased at the door, in advance by phone (215) 228-8200 or online.

**Monday, October 6, 2014 at 7:30PM** at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

#### Sam Harris | Waking Up: A Guide to Spirituality Without Religion

In conversation with Tamala Edwards, anchor, 6ABC Action News morning edition

The cofounder and CEO of Project Reason, a nonprofit dedicated to spreading secularism and scientific knowledge, Sam Harris is a popular skeptic, religious critic, and proponent of the "New Atheism." His bestselling debut *The End of Faith* won the 2005 PEN Award for Nonfiction. His other books include *Letter to a Christian Nation*, *The Moral Landscape*, and *Free Will*. His articles have appeared in *Newsweek*, the *New York Times*, and the *Los Angeles Times*, among many other publications. In *Waking Up*, neuroscientist, philosopher, and author Harris mines hard truths from history's greatest saints and prophets for those who desire spirituality without religion.

FREE

**Tuesday, October 7, 2014 at 12:00 to 1:00 PM** at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org> Tel: 215-925-2222

#### Brown Bag Lecture: "Sciences of the Similar: A History of 'Me-Too' Medicines"

##### A talk by Jeremy Greene

When in 2011 the new agent pitivastatin was launched as the eighth "statin" drug on the American market, it was derided by many in the medical press as just another "me-too" drug. Why did the world need another, more expensive statin, critics asked, when so many other similar drugs were already generically available? This complaint is familiar: by the early 21st century the me-too drug had become a stock character in critiques of the increasingly trivial innovation of the pharmaceutical sector. Greene's talk will narrate the origins and development of the me-too drug from the early 1960s to the early 21st century as an inverted history of biomedical innovation. In a biomedical marketplace that values innovation, the me-too drug represented a form of minor fraud: a new product that claimed to be a significant innovation but in practice was only trivially different from its competitors. In the American context, public and professional critique of me-too drugs first became visible in a series of congressional inquiries into the pharmaceutical industry under the Democratic Senators Estes Kefauver and Gaylord Nelson in the 1960s and 1970s. But the me-too drug had its defenders as well, from industry, the medical profession, and even consumer groups. Using manuscripts from institutional and personal archives, government documents, and readings

from professional, policy, popular, and trade literatures, Greene traces the history of the me-too drug as a litmus test for distinguishing significant from trivial innovation in the biomedical field.

Free and Open to the Public

**Thursday, October 9, 2014 - 7:00pm to 10:00pm** at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

#### **Night Skies in the Joel N. Bloom Observatory**

Hosted by Franklin Institute Chief Astronomer Derrick Pitts, Night Skies in the Observatory is a monthly stargazing event held in the Joel N. Bloom Observatory. View celestial objects in the night sky, including stars, planets, nebulae, and if conditions are right, a galaxy or two, from 5 different rooftop telescopes in the Observatory. The evening includes a Fels Planetarium show and a lecture or presentation (appropriate for ages 8 and up) on an astronomical or space science topic. The Observatory is staffed with knowledgeable observers and free star maps are provided.

Ticket Prices: \$5.00 Per Person, Free for Members

**Thursday, October 9, 2014 at 7:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

#### **OVER MY DEAD BODY: MURDER MYSTERY IN THE CEMETERY**

This Halloween season, the tombs of historic Laurel Hill Cemetery become a stage with an interactive theatre performance. The Candlelight Murders, inspired by real stories from the Cemetery's history; has been written and produced by Philadelphia playwright, Loretta Vasile. In it, the untimely death of an heiress leads to her family gathering at Laurel Hill Cemetery to have her memorial and hunt for her missing will, but an unexpected guest brings evidence that her death was far from natural. Whodunnit? Audiences will have a chance to don their detective caps and search for clues on the cemetery grounds. Before the end of the show, they can submit their best guess about the criminal's identity. Was it a greedy family member, desperate for an inheritance? A mysterious guest who showed up uninvited to the memorial? Or the black sheep of the family, angry after years of being shunned? The final scene will reveal the answer and things are not always what they seem.

One performance of The Candlelight Murders is scheduled at Laurel Hill Cemetery: Thursday, October 9 at 7:00pm (with a prescheduled rain date of Friday, October 10 at 7:00pm). The cost for the show is \$35/person general admission and includes wine, beer and refreshments. Advanced Reservations are requested and seating is limited. Tickets can be purchased by phone, (215) 228-8200 or online.

Upon arrival, check in at Laurel Hill Cemetery's Gatehouse entrance, 3822 Ridge Avenue,

Philadelphia PA, 19132. Free parking is located in the lot directly across the street from the Gatehouse.

**Sunday, October 12, 2014 at 1:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

#### <http://www.thelaurelhillemetery.org> **SINNERS, SCANDALS and SUICIDES**

Laurel Hill has its brave military heroes like George Gordon Meade, its uplifting reformers like Sarah Josepha Hale, and selfless philanthropists like Robert Carson. But what about the less than pure spirits?... The South Philly gangster who got whacked when he tried to infiltrate the Schuylkill County numbers racket? The Civil War hero who made his fortune from white lightning and who, because of his many illicit affairs, was referred to by the local press as "a slayer of innocence and a robber of chastity"? The chemical heiress who lost her money in an infamous Broadway bomb starring the producer's talentless girlfriend? The noted artist who committed suicide during the Depression when his priceless book and art collections were sold at auction for a few thousand dollars? The final resting places of these troubled souls will be among the many stops on our walking tour of Laurel Hill's scandalous, sinful and sordid side.

The tour will take place on Sunday, October 12 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, in advance by phone (215) 228-8200 or online.

Guide: Tom Keels

**Monday, October 13, 2014 at 6:00 p.m** at **N a t i o n a l Mechanics, 22 S. Third Street, Philadelphia, PA 19106**



#### **Science on Tap**

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is hosted by the Mutter Museum

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontapphilly.com/>

**Monday, November 10, 2014 at 6:00 p.m** at **National Mechanics, 22 S. Third Street, Philadelphia, PA 19106**

#### **Science on Tap**

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is hosted by the American Philosophical Society Museum

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontapphilly.com/>

**Tuesday, October 14, 2014 at 12:00 to 1:00 PM** at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org> Tel: 215-925-2222

#### **Brown Bag Lecture: Stefano Gattei**

##### **A talk by Stefano Gattei**

Stefano Gattei is an Edelstein Postdoctoral Fellow at CHF and an assistant professor at the IMT Institute for Advanced Studies in Lucca, Italy. His lecture will focus on the project he is currently researching: "Beyond Galileo: Medicine, Alchemy, and Natural Philosophy at the Lyncean Academy."

**Saturday, October 18, 2014, 12-4 PM** at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

[www.wagnerfreeinstitute.org](http://www.wagnerfreeinstitute.org) ph 215-763-6529

**Family Open House - Animals in Costumes! A Spooky Creature Feature - A Halloween-themed family open house. Come in Costume!!** Featuring live animals from the Elmwood Park Zoo at 1PM.

Free and Open to the Public

**Monday, October 20, 2014 at 7:30PM** at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

#### **Walter Isaacson | The Innovators: How a Group of Inventors, Hackers, Geniuses, and Geeks Created the Digital Revolution**

Bestselling biographer Walter Isaacson's portrait of Apple co-founder Steve Jobs, released just weeks after the tech guru's death, became an international bestseller and broke all records for sales of a biography. Isaacson has also penned "energetic, entertaining, and worldly" (The New Yorker) bios of Benjamin Franklin, Henry Kissinger, and Albert Einstein. The president and CEO of the Aspen Institute for educational and policy studies, he has also served as the chairman of CNN, managing editor of Time magazine, and chairman emeritus of Teach for America. The Innovators is the revealing, century-spanning saga of the people who created the computer and the Internet.

Cost: \$15 General Admission, \$7 Students

Buy tickets online

**Tuesday, October 7, 2014 at 7:00 PM** at Washington Memorial Chapel, on Route 23 in Valley Forge. - **Friends of Valley Forge Park Searching for the Continental Powder Works on French Creek**

Wade P. Catts, an Associate Director of Cultural Resources with John Millner Associates, tells about the search for this important industrial complex, which was put to the torch by the British.

<http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

**Wednesday, October 8, 2014 at 7:15 PM** at the Fels Planetarium, The Franklin Institute, 222 North 20th Street, Philadelphia, PA 19103

**The Rittenhouse Astronomical Society**

Astronomy lecture open to the General Public. See website for more details:

[www.rittenhouseastronomicalsociety.org/](http://www.rittenhouseastronomicalsociety.org/)

**Wednesday, October 8, 2014 at 7:00 PM** at Frankford Hall on Frankford Avenue just north of Girard Avenue.

**Philadelphia Nerd Nite ... be there and be square, yo.**

**Science discussions, good food, good company, and plenty of beer!**

For more information see the website at

<http://philadelphia.nerdnite.com/updates/>

Open to the Public. Admission \$5.00

Email us at: [nerdnitephilly@gmail.com](mailto:nerdnitephilly@gmail.com)

**Friday, October 10, 2014 at 7:00 PM** in the Radnor Township Municipal Building, 301 Iven Ave, Radnor, Pennsylvania 19087

**Delaware Valley Amateur Astronomers**

**"Exploring the Most Powerful Particle Accelerators in the Universe with Gamma Rays"**

**Professor Jamie Holder, U. of Del., Dept. of Physics & Astronomy.**

(Prof. Holder is the VERITAS spokesman at University of Delaware.)

VERITAS: Very Energetic Radiation Imaging Telescope Array System

<http://dvaa.org/php/page.php?body=Events>

Free and Open to the Public.

Refreshments are provided. A sales table and library are also available.

**Thursday, October 16, 2014 at 12:30 pm** at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

**Brown Bag Lecture**

**Strategies for the Management of Traditional Cultural Properties: A Navajo Perspective**

The Navajo Nation is the largest Indian reservation within the U.S. and contains hundreds of Traditional Cultural Properties. These properties are sources of power that are used for protection, healing, stability, and the continued existence of harmony and balance of all Navajo people. Traditional Cultural Properties may or may not exhibit evidence of human activity and may simply be embedded in the landscape. In this talk, Roy Maldonado, Tribal Historic Preservation Officer, Navajo Nation Preservation Department, and Jon Berkin, Principal, National Resource Group, LLC, focus on conflicts over the management of Navajo Traditional Cultural Properties, looking at case studies from the Navajo Nation Historic Preservation Department. Presented by the Penn Cultural Heritage Center. Free admission.

**Friday, October 17 and Saturday, October 18 at 7:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

**SOUL CRAWL: HAUNTED HALLOWEEN HISTORY TOURS**

Behold the return of Laurel Hill Cemetery's annual Halloween flashlight tours of yore. No longer featuring the actors, the program will return to its roots as extended nighttime walking tours of the cemetery, focusing on its rich history, and covering its enchanting art and landscape. Tours will last approximately two hours, and will be followed by complimentary cookies and cider aside blazing fire pits. Bring your own flashlights.

Two evenings of the Soul Crawl: Haunted History Halloween Tours are scheduled at Laurel Hill: Friday, October 17 and Saturday, October 18 at 7:00pm.

The cost for Soul Crawl is \$20/person general admission. Purchasing tickets in advance is suggested. Tickets can be purchased at the door, by phone (215)228-8200 or online.

Upon arrival, register at Laurel Hill Cemetery's Gatehouse entrance, 3822 Ridge Avenue, Philadelphia PA, 19132. Free parking is located in the lot directly across the street from the Gatehouse.

**PhACT Lecture**

**Saturday, October 18, 2014 at 2:00 PM**

**Professor Barry Vacker will discuss his book "The End of the World — Again: Why the Apocalypse Meme Replicates in Media, Science, and Culture"**

**Sunday, October 19, 2014 at 1:00pm** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

**FROM DEUTSCHLAND TO DEADLAND: HISTORIC GERMANS OF LAUREL HILL**

Since its founding in 1682, German immigrants have played an important role in the development of Philadelphia. Our Oktoberfest tour will include visits to the final resting places of prominent Germans, including military heroes, brewers, industrialists, politicians and nobility. Attendees will learn about German culture and history, concluding with a 'bier' tasting of German style beers. Visitors may even learn to speak a little "deutsh".

The tour and tasting will take place on Sunday, October 19 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$20/person general admission. Reservations are suggested. Tickets can be purchased at the door, in advance by phone (215)

228-8200 or online.

Guide: Andy Waskie, Ph.D.

**Monday, October 20, 2014 at 7:30PM** at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

**Walter Isaacson | The Innovators: How a Group of Inventors, Hackers, Geniuses, and Geeks Created the Digital Revolution**

Bestselling biographer Walter Isaacson's portrait of Apple co-founder Steve Jobs, released just weeks after the tech guru's death, became an international bestseller and broke all records for sales of a biography. Isaacson has also penned "energetic, entertaining, and worldly" (The New Yorker) bios of Benjamin Franklin, Henry Kissinger, and Albert Einstein. The president and CEO of the Aspen Institute for educational and policy studies, he has also served as the chairman of CNN, managing editor of Time magazine, and chairman emeritus of Teach for America. The Innovators is the revealing, century-spanning saga of the people who created the computer and the Internet.

Cost: \$15 General Admission, \$7 Students

Buy tickets online

**Thursday October 23, 2014 at 5:30 PM-9:00 PM** at **The Academy of Natural Sciences**, 1900 Benjamin Franklin Parkway, Philadelphia 19103  
[www.ansp.org](http://www.ansp.org) 215-299-1108

**Mega-Bad Movie Night: The Lost World**

Join us at the Academy after hours to watch an

"awesomely a w f u l"

movie. Witty

experts will

be onstage to

offer their

quips and

sidesplitting

comments on

the many

scientific

absurdities—think

Mystery Science

Theater 3000!

In this edition of

Mega-Bad Movie

Night, we are

showing the 1960's

**The Lost World.**

Purchase tickets here:

<http://www.ansp.org/get-involved/programs/adult-programs/mega-bad-movie-night/Mega-Bad-Movie-Night-Tickets/>

**Thursday, October 23, 2014 at 6:00 pm** at

University of Pennsylvania

Museum, 3260 South

Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

**Evening Event**

**Douglas G. Lovell, Jr. "Reports from the Field"**

The Kolb Society of

Fellows focuses its

research on ancient,

pre-industrial

cultures and modern,

non-industrial

peoples of the world,

and supports

students who are

actively engaged

with material



culture and archaeological studies. In this program, the Junior Fellows of the Kolb Society at the Penn Museum present their current research. Free admission.

**Friday, October 24, 2014 at 10:00am** at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA 19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

**MONTHLY FOURTH FRIDAY TOUR SERIES: HOT SPOTS and STORIED PLOTS**

In life and in death, we all have stories to tell. Join Laurel Hill Cemetery for an informative overview of Laurel Hill's long and colorful history, which will include many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. This is the perfect tour for first-time visitors to Laurel Hill, and anyone else who enjoys beautiful art, scenic nature and fascinating history. "Hot Spots and Storied Plots" will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday tour series, which take place on the fourth Friday of every month at 10:00am.

October's walking tour will take place on Friday, October 24 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$8/person general admission. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Russ Dodge

**Friday, October 24, 2014.**

<http://www.thelaurelhillemetery.org>

**10th ANNUAL GRAVEDIGGERS' BALL**

The Gravediggers' Ball is the annual fundraiser of the Friends of Laurel Hill Cemetery, a 501(c)(3) nonprofit organization working to preserve, interpret and promote the site for which it exists. 2014 marks the 10TH ANNIVERSARY of the Ball!

Since its establishment in 1836, Laurel Hill Cemetery has been maintained as a free and fully accessible educational, environmental and recreational resource for both nearby communities and faraway visitors. It has served equally as a place of enjoyment for the living and one of peaceful rest for the dead for over 175 years.

All proceeds from the Gravediggers' Ball directly support the ongoing public accessibility, preservation and interpretation of historic Laurel Hill Cemetery. For more information or to buy tickets, [visit www.gravediggersball.org](http://www.gravediggersball.org).

**Monday, October 27, 2014 at 7:00 PM** at MaGerks Pub and Grill, 582 South Bethlehem Pike, Fort Washington, Pennsylvania 19034.

**American Revolution Round Table of Philadelphia**, <http://arrtop.com/>

**William Kidder on A People Harrased and Exhausted on the 1st Hunterdon County Militia**

**Tuesday, November 4, 2014 at 7:00 PM** at Washington Memorial Chapel, on Route 23 in Valley Forge. Friends of Valley Forge Park

**The Forging of American Independence, 1774-1776**

Acclaimed historian and author Richard R. Beeman recalls the remarkable story of how a

divided Continental Congress united for freedom.

<http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

**Monday, November 10, 2014 at 6:00 p.m** at **National Mechanics**, 22 S. Third Street, Philadelphia, PA 19106

**Science on Tap**

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is hosted by the American Philosophical Society Museum

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontapphilly.com/>

**Wednesday, November 12, 2014 at 7:15 PM** at the Fels Planetarium, The Franklin Institute, 222 North 20th Street,

Philadelphia, PA 19103

**The Rittenhouse Astronomical Society**

Astronomy lecture open to the General Public. See website for more details:

[www.rittenhouseastronomicalsociety.org/](http://www.rittenhouseastronomicalsociety.org/)

**Wednesday, November 12, 2014 at 7:00 PM** at Frankford Hall on Frankford Avenue just north of Girard Avenue.

**Philadelphia Nerd Nite ... be there and be square, yo.**

**Science discussions, good food, good company, and plenty of beer!**

For more information see the website at

<http://philadelphia.nerdnite.com/updates/>

Open to the Public. Admission \$5.00

Email us at: [nerdnitephilly@gmail.com](mailto:nerdnitephilly@gmail.com)

**Thursday, November 13, 2014 - 7:00pm to 10:00pm** at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

**Night Skies in the Joel N. Bloom Observatory**

Hosted by Franklin Institute Chief Astronomer Derrick Pitts, Night Skies in the Observatory is a monthly stargazing event held in the Joel N. Bloom Observatory. View celestial objects in the night sky, including stars, planets, nebulae, and if conditions are right, a galaxy or two, from 5 different rooftop telescopes in the Observatory. The evening includes a Fels Planetarium show and a lecture or presentation (appropriate for ages 8 and up) on an astronomical or space science topic. The Observatory is staffed with knowledgeable observers and free star maps are provided.

Ticket Prices: \$5.00 Per Person, Free for Members

**Friday, November 14th, 2014 PM** at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

[www.wagnerfreeinstitute.org](http://www.wagnerfreeinstitute.org) **ph 215-763-6529**

**A Sip of Science - Honoring Dr. Peter Dodson for his groundbreaking work on dinosaurs and**

**vertebrate paleontology.**

**Friday, November 14, 2014 at 7:00 PM** in the Radnor Township Municipal Building, 301 Iven Ave, Radnor, Pennsylvania 19087

**Delaware Valley Amateur Astronomers**

**"The History of the Telescope: Old Light, New Insight"**

**Bart Fried, founder, Antique Telescope Society.**

<http://dvaa.org/php/page.php?body=Events>

Free and Open to the Public.

Refreshments are provided. A sales table and library are also available.

## PhACT Lecture

**Saturday, November 15, 2014 at 2:00 PM - Lecture**

**"Neuroethics: the Perils and Potential of Brain Science"**

**Ted Schick, Professor of Philosophy at Muhlenberg College, will discuss Neuroethics: the Perils and Potential of Brain Science.**

**Monday, November 24, 2014 at 7:00 PM** at MaGerks Pub and Grill, 582 South Bethlehem Pike, Fort Washington, Pennsylvania 19034.

**American Revolution Round Table of Philadelphia**, <http://arrtop.com/>

**Dr. John J. McLaughlin will speak on Black Loyalists.**

**Tuesday, December 2, 2014 at 7:00 PM** at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

**Give Me a Fast Ship: The Continental Navy**

The adventures of the sailors and the ships of America's fledging Navy, as meticulously researched and masterfully told by author Tim McGrath.

<http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

**Monday, December 8, 2014 at 6:00 p.m** at **National Mechanics**, 22 S. Third Street, Philadelphia, PA 19106

**Science on Tap**

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is hosted by the Wagner Free Institute of Science

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontapphilly.com/>

I support the aims of PhACT and would like to join/rejoin for the next year. The annual membership is \$15 and \$10 for students which includes e-mail delivery of Phactum.

If you wish **US Mail delivery annual membership is \$25.** Checks should be payable to **PhACT.**

Membership dues of \$ \_\_\_\_\_ enclosed to pay for \_\_\_\_\_ years of membership.

Donation of \$ \_\_\_\_\_ enclosed for additional support  
Donation of \$ \_\_\_\_\_ dedicated for High School Science Fair prizes

**Mail checks to:**  
**PhACT**  
**653 Garden Road**  
**Glenside, PA 19038**

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_ E\_mail \_\_\_\_\_

## The Philadelphia Association for Critical Thinking is grateful

for the hospitality extended by Community College of Philadelphia and especially Dr. David Cattell, Chair of the Physics Department, for hosting PhACT and giving us access to such excellent facilities. Part of CCP's mission is to serve Philadelphia as a premiere learning institution and PhACT is pleased to support this goal by having talks on wide ranging, engaging, and educational topics. Students and faculty are invited to be active participants in our activities.

### The PhACT Council 2012/13

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The PhACT website is: [www.phact.org](http://www.phact.org)

*Phactum* is, distributed 4 times a year beginning January 2014 and is the main propaganda organ for the Philadelphia Association for Critical Thinking.

If you are not a supporting member/subscriber we invite you to become one. \$15 for a one year membership to PhACT with email Phactum subscription. \$25 for US Mail subscription. Donations are welcome.

Send letters of rebuttal, ideas, short essays, poetry, opinion pieces, complaints, and lavish praise to Ray Haupt, Phactum editor, at [phactpublicity@aol.com](mailto:phactpublicity@aol.com).

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Phactum Editor, Ray Haupt  
[phactpublicity@aol.com](mailto:phactpublicity@aol.com)

**"Liberty has never come from the government. Liberty has always come from the subjects of it. The history of liberty is a history of resistance."**

~ Woodrow Wilson (1856 - 1924), 28th President of the United States