

Phactum

The Newsletter and AntiWoo Woo Organ of the
Philadelphia Association for Critical Thinking
April/May/June 2014

editor: Ray Haupt email: phactpublicity@aol.com
Webmaster: Wes Powers <http://phact.org/>



**August 1914: Don't worry. It
should end by Christmas.**

The year 2014 marks the 100th anniversary of the beginning of World War 1. No doubt as 2014 and subsequent years move along we will hear more about that great conflict on TV and likely in the movies.

Europe had been simmering for some time as there was a resurgence of imperialism throughout Europe, and accordingly armed forces were building to massive proportions. Then, on June 28, 1914 Archduke Francis Ferdinand heir to the Austria-Hungary throne and his wife were assassinated by a Serbian Nationalist in Sarejevo. A month later, Emperor Franz Joseph of Austria-Hungary declared war on Serbia and Russia and on that day there was a skirmish in preparation of invasion of Serbia.



German Artillery at the Battle of Liege, August 7, 1914

The first major battle of World War 1 started on August 5 when the Germans invaded Liege, Belgium. The Belgians were badly outnumbered and by August

16 had been defeated at that position, casualties being between 2,000—3,000 on each side. Less than a month later the First Battle of the Marne commenced, a far more bruising engagement with about 250,000 casualties among the French and the Germans.

America did not enter the war as a combatant nation until President Woodrow Wilson declared war on Germany on April 6, 1917. By August, 1917 one million American soldiers were on the Western Front.

And, so, trench warfare continued for the next year and a half just as it had since 1914. Eventually the war ended with a very flawed treaty, The Treaty of Versailles, on November 11, 1918.

Not all was bad. World War 1, like all wars, did encourage science and technology, and there were many medical advances. Plastic surgery and skin graft were greatly improved and techniques of blood transfusion were refined causing many battlefield survivals. Some years after the War dreaded nitrogen mustard gas was reformulated to become the first useful chemo-therapy for cancer patients.

Phactum readers are invited to compose and submit articles about this great conflict, especially on matters of the science advances of that era.

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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.

Monday, April 28, 2014 at 7:30 PM - The Believing Brain: From Ghosts and Gods to Politics and Conspiracies – How We Construct Beliefs and Reinforce Them as Truths

Synthesizing thirty years of research, **Michael Shermer** upends traditional thinking about how humans form beliefs about the world. Simply put, beliefs come first, and explanations for beliefs follow. The brain, Shermer argues, is a belief engine. Using sensory data that flow in through the senses, the brain naturally looks for and finds patterns — and then infuses those patterns with meaning, forming beliefs. Once beliefs are formed, our brains subconsciously seek out confirmatory evidence in support of those beliefs, accelerating the process of reinforcing them — and round and round the process goes in a positive feedback loop. Shermer provides countless real-world examples of how this process operates, from politics, economics, and religion to conspiracy theories, the supernatural, and the paranormal. And ultimately, he demonstrates why science is the best tool ever devised to determine whether or not our beliefs match reality.

Dr. Michael Shermer is the founder of the Skeptics Society and is Publisher of *Skeptic* magazine, a monthly columnist for *Scientific American*, an Adjunct Professor at Claremont Graduate University and Chapman University, and the author of *The Believing Brain*.



Time: 7:30 PM

**Place: Auditorium of the Bonnell building off 17th Street at the Community College of Philadelphia
This is not our usual meeting location.**

**Check this website for a campus map: <http://www.ccp.edu/about-us/locations/main-campus>
The Bonnell building is the building marked "B" on the map. We'll have signs posted to the meeting room from the building lobby.**

**The main parking garage will be open for this meeting.
Admission is FREE and Open to the Public.**

Saturday, May 17, 2014 - PhACT Scientific Expedition

Don Nigroni, a longtime PhACT member, naturalist, and monster hunter extraordinary, will lead another monster/ghost hunting expedition. Past failures to capture the Jersey Devil and the Ape Boy of the Chester Swamps do not deter enthusiasm for future success in such ventures. Ghosts seem to prefer certain types of places such as cemeteries, where their mortal remains lie, and battlefields and old houses, the locations where they died. And situated in the woods at Ridley Creek State Park in Delaware County are ruins of colonial houses just waiting to be investigated. It was once thought that we had two distinct bodies, a solid corporeal body and a spiritual one composed of breath, the latter animating the former. A ghost was believed to be a manifestation of a disembodied spirit; spirit, from the Latin spiritus, meaning breath.



Exterior view of the Mosser dwelling house at Ridley Creek State Park. April 2011.

State Park at 10:00 AM and take a roughly three mile loop past the ruins of the colonial Mullen dwelling house and the Mosser dwelling house, summer kitchen and barn. After lunching at Picnic Area #17, we will proceed to the remains of the historically significant Jacob Minshall House (1711), about one mile each way.



Picnic Area #17 at Ridley Creek State Park. August 2013.

Our guide, Don Nigroni, will discuss the history of ghostly apparitions and of this Piedmont site. Accompanying the expedition will be Jeff Cooney and Robb Kerr, Heinz National Wildlife Refuge Weed Warrior trainers, who will be providing zoological and botanical information about the park. Photo-documenting the day's activities will be Kim Sheridan. We will meet at Picnic Area #17 in Ridley Creek



Exterior view of the Jacob Minshall dwelling house at Ridley Creek State Park. January 2014.



Exterior view of the Mullen dwelling house in fog at Ridley Creek State Park. January 2014.

Although we might not find many ghosts along the way, we will surely learn about the rich history of the area and the natural history of this park which covers over 2,606 acres. Bring insect repellent, sturdy shoes, lunch, binoculars, and a camera. The event is free and open to the public. For more information see: <http://www.dcnr.state.pa.us/stateparks/findapark/ridleycreek/>

Saturday, June 21, 2014 - PhACT Picnic

10:00 to 2:00 at Mondauk Common Park (our usual location)

We always have fun visiting, eating, and playing sports. Bring your own food, you can cook on the grill. And bring stuff to throw. We have reserved the pavilion in the woods on the Southeast corner of Mondauk Common park in Upper Dublin. This is good fun for the whole family. We have negotiated with the park ants and they agree to not show up before 1:00 PM.

We will again have a book swap - it can be a great free way to build up a science/skeptic book collection - or help someone else do so.

Broad street runs between Susquehanna and Limekiln roads. From the PA turnpike, go to the Fort Washington exit and take Rt 309 north, take the second exit and turn right onto Susquehanna. Make a left at the second light onto Broad Street, park in the second parking lot on the left, and follow the little sand path up to the pavilion.

For those with a GPS unit, program it for the intersection of Broad Street and Twin Pond Drive in Fort Washington, PA. All are welcome. Free.



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

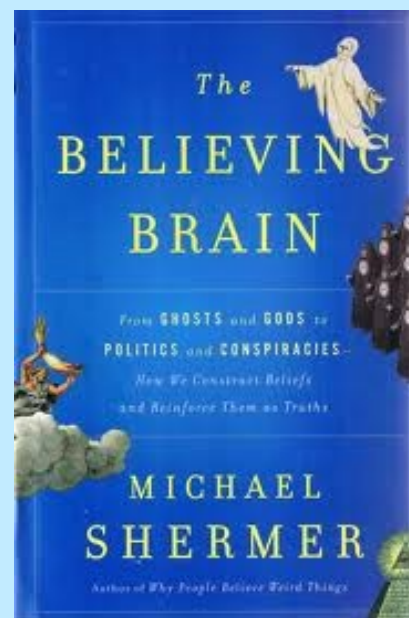
In this, his magnum opus, one of the world's best known skeptics and critical thinkers Dr. Michael Shermer—founding publisher of *Skeptic* magazine and perennial monthly columnist (“Skeptic”) for *Scientific American*—presents his comprehensive theory on how beliefs are born, formed, nourished, reinforced, 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.

Intertwined 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.



Letters to the Editor

Letters to the editor are encouraged

Editor: Remember when crackpots claimed to be able to detect malaria using light and magnets? Using “cheap magnets and run-of-the-mill pocket lasers”. Now they claim to be able to “hear” malaria! Actually, none of them are crackpots. Both methods exploit properties of hemozoin (aka “malaria pigment”) crystals, which are produced by the malaria parasite. Hemozoin crystals are magnetic, and magnetism affects the polarization of light. That's the approach of the “magnets and lasers” group (<http://physicsworld.com/cws/article/news/2012/oct/30/physicists-detect-malaria-using-light-and-magnets>).

The acoustic test is described in *Chemical & Engineering News* (13 January 2014 p. 27) as being reported in *Proc. Nat. Acad. Sci. USA* 2013, DOI: 10.1073/pnas.1316253111). Not only is *PNAS* a very important journal, it can be pronounced in such a way as to entertain 8th graders. Works for me. But you have to pay to read it, so for now I'll take *C&EN's* word for it. I'd better, since only *Phactum* publishes more of my letters. By contrast, I've never been able to get a letter published in the *New York Times*, which is very difficult to do unless your name is Felicia Ackerman.

“When bombarded by picosecond near-infrared laser pulses, the [hemozoin] nanocrystal generates a transient vapor bubble around itself. The acoustic signature of the bubble popping can then be detected.” The method works “when as few as 0.00034% of cells are infected”. Amazing. We “can detect a single parasite-infected blood cell among a million

normal cells in seconds,” but we can't put a man on the moon. Go figure.

Howard J. Wilk
Philadelphia

Editor: Iwo Jima is a volcanic island that was the site of a bloody battle between the United States and Japan in World War II (“the big one”). “Iwo” means “sulfur” in Japanese and Iwo Jima means “sulfur island”; sulfur used to be mined there. The Japanese pronunciation of the word for sulfur is roughly “ee-oh”. The modern transliteration of the word is “io”; “iwo” is from an older system of transliteration, but it's likely the island will continue to be called Iwo Jima because of the famous battle that took place there and the famous photo taken by Joe Rosenthal of the second flag raising atop Mt. Suribachi, the highest point on the island. No, the photo was absolutely, positively not staged, but that's for another letter for *Phactum*. It's publish or perish, you know.

Io is also the name of one of the four big moons of Jupiter that were discovered by Galileo. It's the most volcanically active body in the solar system, and its volcanoes spew forth sulfur and sulfur compounds. You can find lots of photos of it online; it looks like a sort of pizza, or a moon with a very bad case of acne, or one of the pox diseases, or eczema, or seborrhea, or the heartbreak of psoriasis.

But if that's not enough coincidences for you, consider that Io, the moon, was named after Io from Greek mythology, who was a priestess of Hera and a lover of Zeus, who changed her into a heifer. As far as I can tell, Io, the mythological figure, has absolutely nothing to do with sulfur, or volcanoes. What are the chances of that, in a letter from me in *Phactum*?

Io, sulfur!

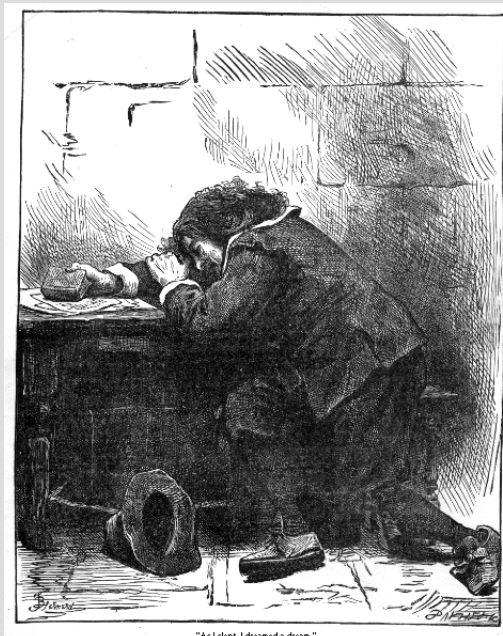
Don't be shy about writing,

but don't go to Gaol for 12 years like
17th Century Christian writer John Bunyan.

Thoughtful Letters to the Editor and other Correspondence are highly valued for inclusion in *Phactum*. If you have thoughts on some matter that bugs you, why just stew on them? Write down those thoughts and share with other *Phactum* readers? Writing is a great way to hone and refine critical thinking skills and perhaps enlighten others.

Articles, poetry, Letters and Rants to the Editor, spelling corrections, suggestions to improve *Phactum*, items for the calendar, and other matters of interest are wanted for *Phactum*. Almost all topics are welcome, but please, no partisan politics or Hollywood Gossip.

Send submissions to phactpublicity@aol.com



“As I slept, I dreamed a dream.”

Howard J. Wilk
Philadelphia

Editor: Is laughter really the best medicine? The subject was recently reviewed in BMJ (<http://www.bmj.com/content/347/bmj.f7274>), "Laughter and MIRTH (Methodical Investigation of Risibility, Therapeutic and Harmful): narrative synthesis" by R E Ferner and J K Aronson. 76 references!

The authors review the published research on the benefits of laughter, such as reduced anger, increased pain threshold, etc., but also its dangers, such as abdominal injury ("side splitting laughter").

The paper calls for more research (and presumably more funding) as all research papers do. Much remains to be determined: Do sick jokes make one ill? Do jokes in bad taste cause dysgeusia (i.e., bad taste)?

The authors don't ask, but I'm asking: Why won't laughter heal amputees?

Howard J. Wilk
Philadelphia

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Various Ruminations

of Woo Woo and Real Science and some Gossip

Collected/Written by Ray Haupt
(with help from others)

School Science Fairs

This year PhACT members participated as judges in high school and middle school Science Fairs in Philadelphia County and Bucks County.

Of the Philadelphia County event Becky Strickland writes:

Carver Science Fair

Longtime PhACT members Dr. Dave Langdon and Dr. Catherine Fiorello judged the Carver Science Fair at Temple University on March 6th, generously rescheduling their days when the fair had to be postponed from the original March 4th, due to snow. The fair, which has been operating yearly since 1979, has touched the lives of over 36,000 students. It is open to all students attending school or homeschooled in Philadelphia County.

This year's fair showcased nearly 600 exhibits in 14 scientific disciplines. PhACT prizes are given to middle school students for excellence in critical thinking. Specifically we looked at projects that were manipulat-

ing a variable and followed proper scientific procedure. 7 exhibits were initially selected, then, and after speaking with each student 3 equal prizes were awarded to:

Congratulations to our winners and many thank to our judges.

Of the Bucks County Science Fair Eric Krieg writes:

Bucks County Science Fair

For ten years now I have enjoyed helping the Bucks County Science Fair hosted at Del Val college. This week, Tom Napier served together. This year I was not just judging for the 3 100\$ PhACT prizes for critical thinking, but also another for "Applied Math" funded by my father in honor of his father- and also a prize for "Engineering Robotics" funded by my current consulting client, Tesco-Advent. We were drawn to several contestants who had the integrity and clarity of reason to conclude their original hypothesis was simply invalid. Our second place winner openly conceded that although her test group had a slightly higher average reading than her controls, it was simply by too low a margin to justify validating her hypothesis. Amen! I've frequently read articles from journalists that lack that sense. For the post lunch chance to interview students, we not just refined our initial assessments but took the opportunity to encourage them in science and give a few related scientific observations they'd be unlikely to encounter in middle school Science classes. Our first place prize went to Sayed W. for his investigation comparing blind folded walking across age groups. (older people do better!). Second went to Sophie C. for her well run "failure" to prove people learn better from paper than a computer screen. And 3rd, Julia G. who started with a flawed idea of gravity vs inertia, but ended with a proper conclusion. All 5 students I presented awards with came up after the ceremony to thank me and ask more about the award sponsors. I encourage people to help me judge or line up more sponsors for more prizes next year. During much of the year, I fret whether then next generation will rise to meet the challenges - but at Science fair time, I feel there are worthy tweens we can pass the torch to.

Kevin Trudeau Goes to Jail. Does Not Pass Go.

No doubt some considerable number of skeptics take a certain joy in the fact that Kevin Trudeau, a TV pitchman and notorious alternative medicine fraudster has been sentenced to 10 years in federal prison.

Trudeau has been prolific as an author of books espousing conspiracy by pharmaceutical companies and government to withhold information about various diseases and, according to him, facts about the inefficacy of expensive modern medications. Trudeau has been remorselessly pushing alternative "medicine", vitamin supplements such as "Coral Calcium",

and phony dieting plans. He has been an AIDS denier once stating AIDS is “one of the greatest hoaxes and deceptions ever perpetrated on the American public”. Trudeau has for many years been peddling natural cancer cures on TV infomercials. Astonishingly, Trudeau had aired his pitches some 32,000 times after having been ordered by a federal judge to suspend such advertising.

Kudos to U.S. District Judge Ronald Guzman for rendering a decision of 10 years in prison and a fine of 38 million dollars. Guzman described Trudeau as “deceitful to the core.”

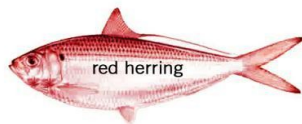
See more in a Chicago Tribune story at:

http://articles.chicagotribune.com/2014-03-17/business/chi-kevin-trudeau-sentenced-20140317_1_kevin-trudeau-global-information-network-guzman

Red Herring Department

Do you know what a Red Herring is other than a little red fish?

A red herring is a detail or remark inserted into a discussion, either intentionally or unintentionally, that sidetracks the discussion. The red herring



is invariably irrelevant and is often emotionally charged. The participants in the discussion go after the red herring and forget what they were initially talking about; in fact, they may never get back to their original topic..

Red Herrings are common in debate, especially political debate, and when in debate it is useful for a participant to recognize it happening or be equipped to use the technique.

There are many logical fallacies in discourse and debate and many of those can be found in a little booklet created by Paul Schlueter. The booklet, *PhACT's Roster of I.R.E. (Infamous Rational Errors)* is available free at PhACT meetings. The second edition did not include “red herring” but the third edition will. Many other logical fallacies are missing and Phactum readers are invited to contribute new additions and corrections. Send contributions to the Phactum editor at phactpublicity@aol.com

The booklet contents can be also be found online at PhACT's website. Visit: <http://www.phact.org/ire.php>

Herring, by the way, are not red when alive, they tend to be silver or greenish. Smoked herring tend to be reddish.

Tiktaalik and the Weather Channel

Tiktaalik, it seems, has gained immense popularity as a fossil and new research reinforces the notion that this creature of the Devonian epoch was a link between fish and animals that can walk. Professor Ted Daeschler, a paleontologist at Philadelphia's Academy of Natural Science, is quoted in this short article. Ted was PhACT's speaker in May of 2007, his topic being his recent adventure and discovery of Tiktaalik on a remote Canadian island far above the Arctic Circle.

<http://www.wunderground.com/news/fossils-reveal-link->



between-fish-and-walking-animals-20140114

It does seem a bit strange that this story is carried by the Weather Channel, but congratulations to them for presenting an interesting story in science. There are those factions that are tiktaalik deniers but Weather Channel endorsement is a powerful communication tool for science. And anyway, if you can not believe the Weather Man, who can you believe??

New Anti-Quackery Website

Dr. Stephen Barrett reported in Consumer Health Digest of February 2, 2014 that a new anti-quackery organization has been formed.

Mark Crislip, M.D., and four other anti-quackery activists have announced the formation of the nonprofit Society for Science-Based Medicine (SFSBM). The group's mission includes:

- Educating consumers, professionals, business people, legislators, law enforcement personnel, organizations, and agencies about science-based medicine.
- Providing resources and information concerning all aspects of science-based medicine.
- Providing a central resource for communication between individuals and organizations concerned about science-based medicine.
- Supporting sound consumer health laws for the practice of science-based medicine and opposing legislation that undermines it.
- Encouraging and aiding legal actions in support of the practice of science-based medicine.

The group's Web site, which is a work in progress, will feature a wiki based on articles from Quackwatch and its satellite sites that will be perpetually maintained and updated by expert editorial teams. The site will also offer fact sheets, links to book reviews, a blog about the group's activities, and many other educational features. The cost of joining the group is \$85 for basic membership or \$25 for student membership. Volunteers are being solicited to help format wiki articles and for other projects.

Research review finds little health-related benefit from meditation

Also in the February 2, 2014 edition of Consumer Health Digest Dr. Barrett Reports:

Researchers at Johns Hopkins University have reviewed whether meditation programs can improve anxiety, depression, mood, mental health-related quality of life, attention, substance abuse, eating habits, sleep, pain, and weight in adults. [Goyal M and others. Meditation programs for psychological stress and well-being: A systematic review and

meta-analysis. JAMA Internal Medicine, 2014] After examining thousands of reports, the researchers found only 47 studies were sufficiently well-designed to be included in their meta-analysis, which concluded:

Mindfulness meditation programs showed (a) moderate evidence of improved anxiety, depression, and pain, (b) low evidence of improved stress/distress and mental health-related quality of life, and (c) low evidence of no effect or insufficient evidence of any effect on positive mood, attention, substance use, eating habits, sleep, and weight.

Mantra-based programs demonstrated no benefit.

There was no evidence that meditation programs were better than drugs, exercise, and other behavioral therapies.

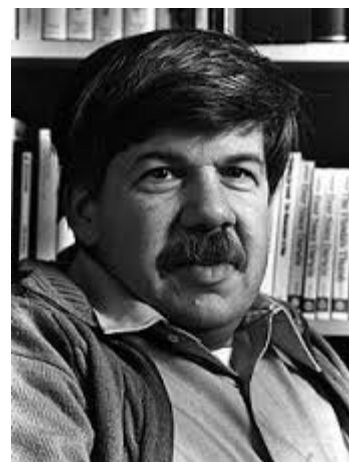
The published report did not consider the extent to which meditation is inappropriately recommended to people who would benefit much more from counseling or psychotherapy that helps them identify and deal with the causes of stress responsible for their symptoms.

PROJECT STEVE: N > 1300

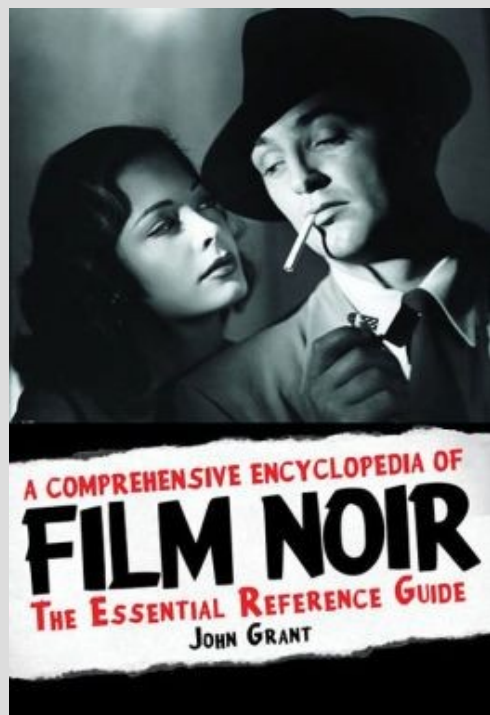
Glenn Branch, Deputy Director, National Center for Science Education, Inc. has reported that signatories of Project

Steve now exceeds 1300.

'With the addition of Stefan Roitsch on January 15, 2014, NCSE's Project Steve attained its 1300th signatory. A tongue-in-cheek parody of the long-standing creationist tradition of amassing lists of "scientists who doubt evolution" or "scientists who dissent from Darwinism," Project Steve mocks such lists by restricting its signatories to scientists with PhDs whose first name is Steve. (Cognates are also accepted, such as Stephanie, Esteban, Istvan, Stefano, or even Tapani -- the Finnish equivalent.) About 1% of the United States population possesses such a first name, so each signatory represents about 100 potential signatories. ("Steve" was selected in honor of the late Stephen Jay Gould, a Sup-



Stephen Jay Gould (1941 - 2002), American evolutionary biologist



John Grant, aka Paul Barnett, is a prolific writer of science fang of science fiction books. He has written over 70 books and recently has branched out to popular culture with an encyclopedia of film noir. If you are a fan of black & white movies featuring a hard boiled detective and a femme fatale this might be an interesting book for you. John was PhACT's speaker September 2010.

A Comprehensive Encyclopedia of Film Noir - The Essential Reference Guide by John Grant

Publisher: Limelight Editions (October 9, 2013) Hardcover: 765 pages
ISBN-10: 1557838313 ISBN-13: 978-1557838315

Featuring rumples PIs, shyster lawyers, corrupt politicians, double-crossers, femmes fatales, and, of course, losers who find themselves down on their luck yet again, film noir is a perennially popular cinematic genre. This extensive encyclopedia describes movies from noir's earliest days and even before, looking at some of noir's ancestors in US and European cinema as well as noir's more recent offshoots, from neonoirs to erotic thrill-

ers. Entries are arranged alphabetically, covering movies from all over the world from every continent save Antarctica with briefer details provided for several hundred additional movies within those entries. A copious appendix contains filmographies of prominent directors, actors, and writers. With coverage of blockbusters and program fillers from Going Straight (US 1916) to Broken City (US 2013) via Nora Inu (Japan 1949), O Anthropolos tou Trainou (Greece 1958), El Less Wal Kilab (Egypt 1962), Reportaje a la Muerte (Peru 1993), Zift (Bulgaria 2008), and thousands more, A Comprehensive Encyclopedia of Film Noir is an engrossing and essential reference work that should be on the shelves of every cinephile.

porter of NCSE and a dauntless defender of evolution education.)

Although the idea of Project Steve is frivolous, the statement is serious. It reads, "Evolution is a vital, well-supported, unifying principle of the biological sciences, and the scientific evidence is overwhelmingly in favor of the idea that all living things share a common ancestry. Although there are legitimate debates about the patterns and processes of evolution, there is no serious scientific doubt that evolution occurred or that natural selection is a major mechanism in its occurrence. It is scientifically inappropriate and pedagogically irresponsible for creationist pseudoscience, including but not limited to 'intelligent design,' to be introduced into the science curricula of our nation's public schools."

Evolution and World War 1

No. World War 1 was not caused by Charles Darwin. It is likely that some Creationists would insist it was. But, in 1914 an accomplished biologist and artist, Ernst Haeckel (1834 - 1919), was the first person known to use the term "First World War". Shortly after the start of the war Haeckel wrote:

There is no doubt that the course and character of the feared "European War"...will become the first world war in the full sense of the word.

~ Indianapolis Star, September 20, 1914

What was known early on as The "European War" eventually became known as "The Great War". In 1920 the book *The First World War 1914-1918* by Charles à Court Repington the term "First World War" was used as the official name for the conflict.

As for Haeckel, he was a proponent of evolution but did not fully see eye to eye with Charles Darwin on some issues. Haeckel did subscribe to many aspects of a Lamarckian form of evolution. Additionally, Haeckel opined that humans first evolved in Asia, not in Africa as claimed by Darwin.

Unfortunately Haeckel is best remembered for his theories that are not quite right. Nonetheless he was a productive scientist having scientifically identified thousands of species new to science. He is an interesting character in the history of science.

Any readers care to research and write an essay about Ernst Haeckel for publication in Phactum? If so then please contact the editor at phactpublicity@aol.com

Gambling Notes

♣ **For problem gamblers, a powerful online rush 'like any drug addict feels'**

As state lawmakers debate the prospect of legalizing Internet gambling, they're focusing largely on whether the practice will help boost casino profits and tax revenue. Drawing less attention is the question of what more Internet gambling could mean for millions of gambling addicts.

<http://www.publicintegrity.org/2014/04/14/14562/problem-gamblers-powerful-online-rush-any-drug-addict-feels>

♣ The Big Gamble

Casino king Sheldon Adelson wants to ban Internet gambling. But states are moving fast to legalize, and even the super PAC billionaire may not be able to stop them. To many, there's a sense of inevitability to online gambling. Nelson Rose, a gambling expert at Whittier Law School, said that politicians have become inured to the reservations they once had about gambling, as state after state has legalized casinos. Read the history behind this fight. Long article http://www.slate.com/articles/news_and_politics/politics/2014/04/legalizing_internet_gambling_sheldon_adelson_casinos_offshore_companies.1.html

♣ Brain study offers hope for gambling addicts

From Cambridge University - Gamblers mistakenly believe they can always beat the odds in a game of chance because they have developed a different pattern of brain activity to non-gamblers. A study has identified a region of the brain - called the insula - that appears to play a critical role in supporting the distorted thinking that makes some gamblers wrongly think they have a better-than-average chance of winning.

http://www.nzherald.co.nz/lifestyle/news/article.cfm?c_id=6&objectid=11234672

♣ Embezzlement a growing trend with problem gamblers

The legalizing of slots gambling seven years ago has brought a wave of white-collar crime by public officials and others in power. Washington County District Attorney Gene Vittone discusses gambling and crime during an interview in his office. But while petty crime has been on the decline in and around The Meadows Casino in North Strabane Township, police are noticing a growing trend where public officials and others in power embezzle money to feed their gambling addictions.

<http://www.observer-reporter.com/article/20140405/NEWS01/140409689#.U08RasvD-UI>

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“But however mysterious is nature, however ignorant the doctor, however imperfect the present state of physical science, the patronage and the success of quacks and quackeries are infinitely more wonderful than those of honest and laborious men of science and their careful experiments.”

~ P. T. Barnum, The Humbugs of the World (1865)

Meeting Reports - January-March 2014

Reported by: Yanyan Li and Edwin Abia-Okon, who are Physics students of Dr. David Cattell at Community College of Philadelphia.

January 18, 2014 - “Genetically Modified Organisms (GMOs) and Science in the Media

Report by Yanyan Li

On Jan 18, 2014, I attended to the PhACT Meeting-Genetically Modified Organisms and Science in the Media. This meeting was presented by Dr. Dave Cragin and Faye Flam. Dr. Dave Cragin is a toxicologist and risk assessment expert. Faye Flam is a science writer. They both work on GMOs for a long time, and they shared experience and opinions with us based on their specialty. Dr. Dave also said that “GMOs are not different from those from conventional breeding practices whether for plants, animals, or microbial enhancement.” And we should promote GMOs because it helps to solve food crisis.

GMOs have good prospects for development, and this makes its own large potential market. Through genetic engineering, we can save a lot of natural resources, and produce more foods. For example, if we use original ways to plant 1 kg of cotton, we have to irrigate 17,000 kg of water. However, GMOs requires less water but produce more foods. So it is a good way to solve global food crisis.

Many GMO foods are proved to be safe by many accredited organizations such as the World Health Organization, U.S. Food and Drug Administration and European Safety Agency. However, GMOs still couldn't be accepted by many people. Professor Cragin and Faye Flam pointed out that activist group's attacks on GMO food equal personal ignorance, and spread scary faulty ideas and sources through public media. Most people will not check citation sources, and just choose to trust the faulty idea from those media. At the same time, GMOs fits most of the “risky” criteria in 12 principal components of outrage, said Sandman in 1991.

Dr. Cragin said that GMO food is the same as conventional food in terms of nutrition and safety. And it is already proved by many scientific researchers and accredited organizations. Many FDA approved GMO foods are selling in the market right now. This is the same happening in Europe and Asia. Dr. Cragin proposed that we should not label GMO food because GMO food and conventional food are the same in every aspect. The GMO labels only mislead people to think GMOs food is different from conventional food and is risky.

“God (Nature, in my view) makes all things good; man meddles with them and they become evil. He forces one soil to yield the products of another, one tree to bear another's fruit. He confuses and confounds time, place, and natural conditions. He mutilates his dog, his horse, and his slave. He destroys and defaces all things; he loves all that is deformed and monstrous; he will have nothing as nature made it, not even himself, who must learn his paces like a saddle-horse, and be shaped to his master's taste like the trees in his garden.”

~ Jean-Jacques Rousseau (1712 - 1778), Swiss philosopher

In summary, GMOs food has large potential to grow in the market. A lot of scientific research is conducted in the GMO food area to ensure that all GMO food is safe and the same as conventional food.

The Score: How The Quest For Sex Has Shaped The Modern Man

by Faye Flam

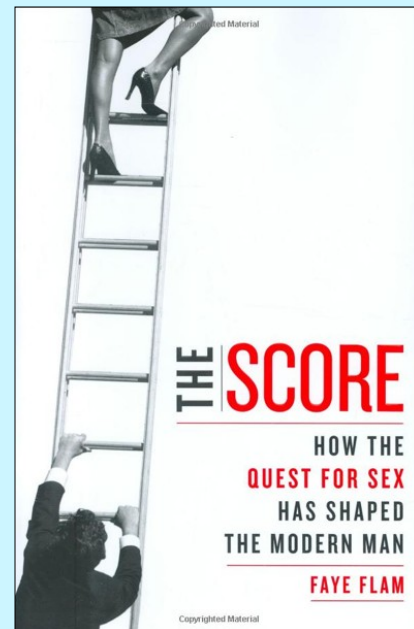
Hardcover: 224 pages Publisher: Avery (June 12, 2008)
ISBN-10: 1583333126

A smart, witty, and fresh look at the male side of the male-female relationship from a science writer and sex columnist at The Philadelphia Inquirer.

Beginning with a “boot camp” for wannabe pickup artists—where men pay thousands of dollars for three days of classroom seminars on how to get women into bed—Faye Flam’s quest for a deeper understanding of men takes her back through the evolutionary history of the human male.

Sweeping from the birth of the first male and female organisms to the sexual foibles of twenty-first-century humans, Flam shows how a small difference in the size of the first sperm and eggs set off a war between the sexes that we’re still fighting today. Since this primordial split, a consistent pattern of behavior has emerged: males use a stunning variety of strategies to make themselves attractive to females, and females put them through the wringer.

By placing the human male in the context of the natural world, Flam highlights some intriguing resemblances among males of all species, but also the unique challenges that men face when courting women—whether for a lifelong partnership or a one-night stand. Flam ultimately reveals that millions of years of evolution have left the love lives of humans suspended somewhere between monogamy and promiscuity, and that it is this eons-old tension between males and females that has created the modern man.



March 15, 2014 - “Bigfoot and Cryptozoology”

Report by Edwin Abia-Okon

The March 15, 2014 PHACT lecture on “Bigfoot and Cryptozoology,” was delivered by Professor Brian Regal, a historian of science and professor of history at Kean University Union New Jersey. The lecture covered the definition of Cryptozoology, etymology of monster, history of the search for cryptids and how such search was derailed from pure scientific pursuits to endeavors by amateurs.

According to Professor Regal before the word monster came to mean strange or horrible imaginary creatures it use to mean sign or instruction to warn of something forthcoming. Cryptozoology, the search for animals whose existence has not been proven, became search for monsters (imaginary creature that is typically large, ugly, and frightening); and eventually, the search for cryptids (a creature or plant whose existence has been suggested but is not discovered or documented by the scientific community. Cryptids often appear in folklore and mythology, leading to stories and unfounded belief about their existence. Well known examples include the Yeti, Bigfoot, and Jersey Devil. History, he said, abounds with monstrous creatures such as cynocephalus creatures: people with the head of a dog, or of a jackal.

Professor Regal asserted that there are numerous historical accounts of monsters. For example, there are the cynocephali -- humans having the head of a dog or of a jackal. Furthermore, books such as the “Mandeville travels”, parade of human monsters; people with ears hanging down to their knees; people with horses’ feet, who run so swiftly they overtake wild beasts; hermaphrodites and the likes. Importantly, the lecturer pointed out that cryptozoology went as far back as Aristotle and Linnaeus [(“Homo ferus” (wild men) and “Homo monstrosus” (monsters))]. He classified the historians of Cryptozoology into, those who can be considered the grandfathers and fathers of cryptozoology. Grandfathers of cryptozoology included individuals such

individuals as: Ivan Terence Sanderson (January 30, 1911 – February 19, 1973) who was a biologist and writer born in Edinburgh, Scotland, who became a naturalized citizen of the United States. Sanderson is remembered for his nature writing and his interest in cryptozoology and paranormal subjects; Bernard Heuvelmans, a Belgian-French scientist, explorer, researcher, and a writer probably best known as "the father of cryptozoology" authored a book, "On the Track of Unknown Animals;" and, Willy Ley, a German-American science writer, spaceflight advocate, and historian of science who helped popularize rocketry, spaceflight, and natural history in both Germany and the United States.

Fathers of cryptozoology included individuals such individuals as: Edward Tyson; a British scientist and physician, commonly regarded as the founder of modern comparative anatomy; Antoine Corneile Oudemans, an authority on parasitic fungi; Richard Owen an English biologist, comparative anatomist and paleontologist, who is probably best remembered today for coining the word Dinosauria

Professor Regal mentioned other renowned anthropologists who have dabbled into cryptozoology as: John Russell Napier, a British primatologist, paleoanthropologist, and physician, popular for his work with human and primate hands and feet. During his life he was widely considered a leading authority on primate taxonomy, but is perhaps most famous to the general public for his research on Bigfoot; Carleton Stevens Coon, an American physical anthropologist, Professor of Anthropology at the University of Pennsylvania, lecturer and professor at Harvard, and president of the American Association of Physical Anthropologists; William Charles Osman Hill; a British anatomist, primatologist, and a leading authority on primate anatomy during the 20th century.

The last gasp for "scientific" cryptozoology was Grover Krantz, a professor of physical anthropology at Washington State University. Krantz, Professor Regal said, was perhaps most famous to the general public as one of the few scientists not only to research Bigfoot, but also to express his belief in the existence cryptids.

Professor Regal noted that Richard Owen has been dubbed the "Sea-Serpent Killer." A particularly famous sea serpent sighting was made by the men and officers of HMS Daedalus. Owen's public criticism of this sighting had unexpected consequences. Where Owen proposed skepticism regarding the presented evidence, naturalists soon adopted a general attitude of rejection towards all stories of locals or amateurs of unidentified animals.

Professor Regal concluded the lecture with an advice for those who have encountered any of these strange creatures, "A photograph will go a long way as evidence of their existence."

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Searching for Sasquatch: Crackpots, Eggheads, and Cryptozoology

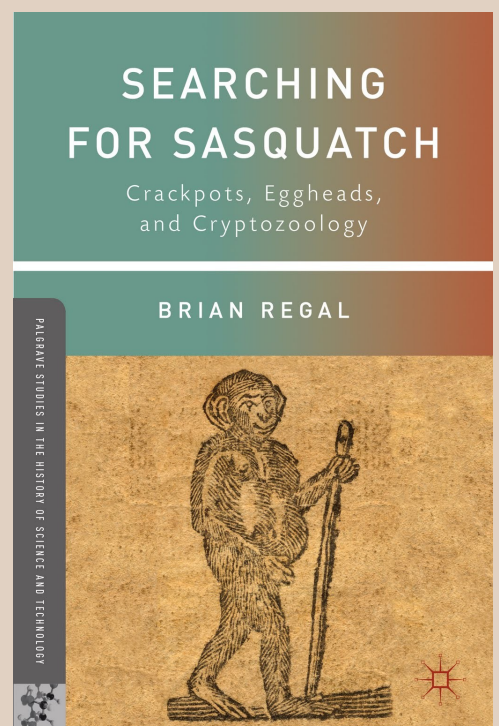
by Brian Regal

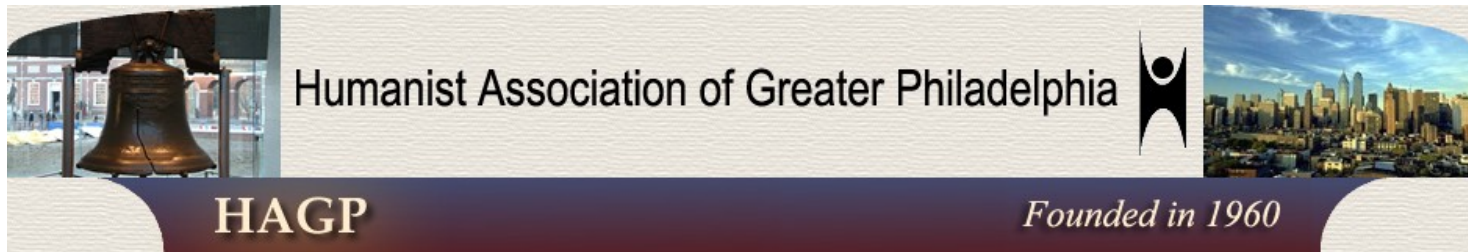
Paperback: 264 pages

Publisher: Palgrave Macmillan; Reprint edition (August 21, 2013)

ISBN-10: 1137349433 ISBN-13: 978-1137349439

Bigfoot hunters and their brethren are often depicted as outcasts, misfits, or passionate amateurs toiling in solitude. But has this always been the case? This fresh and entertaining study looks at the surprisingly complex relationship between professional scientists and cryptozoologists. The traditional heroic narrative of monster-hunting in the late twentieth century treats mainstream, academic scientists (the eggheads) as villains who reject the possibility of anomalous primates and cryptozoology as unworthy of study. It gives a privileged place to passionate amateur naturalists (the crackpots) who soldier on against great odds and an obstinate public to bring knowledge of these creatures to light. However, as historian Brian Regal shows, this is misleading: many professional scientists eagerly sought anomalous primates, examining their traces and working out evolutionary paradigms to explain them. Even though scientific thinking held that creatures such as Bigfoot, Sasquatch, and Yeti did not and could not exist, these scientists risked their careers because they believed them to be a genuine biological reality.





Greetings PHACT members. I was asked to write a short article to introduce the Humanist Association of Greater Philadelphia (HAGP) to you. I've been an HAGP board member for several years and an active member for over a decade. As you probably do, I have attended a variety of secular and science oriented events in the Philadelphia/Allentown area over the years, including numerous PHACT lectures. Given my experiences, I feel our two communities share a common overlap of interests, particularly in leveraging well reasoned, skeptic-style thinking toward a greater understanding of ourselves and the world.

HAGP's membership generally adopts a secular humanist world view. Although a secular humanist position can manifest differently for each person, we generally apply nontheistic, rational principles to how we live in addition to bringing science and reason to bear as we explore the marvels and quandaries that present themselves in our lives.

When I asked HAGP President Bob Lennon to summarize the purpose of our association, he responded with the notion that we seek to continually develop a thriving community for fellow humanists through our four monthly events and numerous private events. Further, HAGP has built this community over many years and it is HAGP's goal to continue to grow by hosting educational and fun activities for its membership and the public. Our members feel it is important that we share our lives with people that share our values and goals.

Personally, I find HAGP provides an especially friendly circle of peers to socialize with while exploring a variety of topics with intellectual integrity, heartfelt sentiment, and a sense of humor. If you're like me, your curiosity leads you to numerous thought provoking pursuits, and I think you'll find HAGP offers a uniquely congenial environment that supports a safe discussion of meaningful topics.

HAGP's monthly events (several listed in this newsletter) include a book discussion, a movie discussion and a speaker program as well as a purely social lunch event to encourage friendly conversation on subjects topical and personal. Similar to PHACT, the topics on our agenda range widely and we importantly design plenty of time into our events to discuss the topic amongst attendees.

In the past our lecture programs have featured speakers who presented on the morality of vegetarianism and separation-of-church-and-state issues. In our book club we discuss both fiction and nonfiction selections like one of my favorites, Rob Morrow's *The Last Witchfinder* (narrated interestingly enough by the Principia Mathematica itself) and *The*

Age of Enlightenment, a skeptical overview of the secular humanist movement and its hopes for the future. Movies we've watched and discussed are also diverse; we've viewed economic dramas like *Margin Call* and liberal documentaries like *Sicko* and *Gasland*, for example. Of note, this June HAGP will also be sponsoring the American Humanist Association's Annual Conference in Philadelphia. In general, HAGP events seed interesting discussions, encourage tolerant voicing of different perspectives, and social fun and activism. Our president suggests new people might feel most comfortable dropping in at our monthly social lunch, which has no agenda except for great conversation and exposure to many diverse points of view.

Most of HAGP's events are within walking distance of the Willow Grove train station to enable participation by suburban and city folk alike. In my opinion, HAGP supports the individual's pursuit of a life philosophy that consistently develops our intellectual, political and dare I say a spiritual (by Carl Sagan's definition) connection to the world.

On behalf of HAGP I invite you to join us on Facebook or Meetup.com or simply by checking an event out in person to sample what our community has to offer. And of course you can investigate our organization further at www.HAGP.org.

Brian Bohmueller, Vice President, HAGP

HAGP Upcoming Events (for more details see PhACT Calendar)

Saturday, April 12, 2014 at 12:00 PM at Willow Grove Park Mall, at Easton, Moreland & Old Welsh Roads, Willow Grove, PA
HAGP Social Lunch at the food court at the Willow Grove Park Mall

Saturday, April 19, 2014 at 7:00 PM at Barnes and Noble 102 Park Ave, Willow Grove, PA. **HAGP Book Club:** We will discuss the Faye Flam's *The Score: How The Quest For Sex Has Shaped The Modern Man*.

Sunday, April 27, 2014 at 1:30 PM at Upper Moreland Library
109 Park Avenue, Willow Grove, PA

HAGP speakers series: Jennifer Bullock of Independent Pennsylvanians will discuss efforts by independents to develop a non-ideological political movement.

June 5-8, 2014 at the Sheraton of Philadelphia 201 N 17th St, Philadelphia, PA 19103

American Humanist Association Annual Conference
Join hundreds of humanists, atheists and freethinkers in Philadelphia for a four-day celebration of humanism!

If at first . . .

or, Tomatoes in "the World of William Penn"

by Clarissa F. Dillon, Ph.D.



There is a pervasive myth about tomatoes in colonial America. Over and over, people tell me that nobody ate tomatoes because they thought they were poisonous. We can find this idea in a history of Pennsylvania agriculture published in 1950: "The tomato...was regarded as poisonous by North American whites until about 1820."¹ There have been more recent presentations.

*...most Americans shared the puritanical revulsion of their English cousins. Americans thought it to be suicidal to eat a raw "love apple," as the tomato was once known.*²

At a lecture on the foods on Thomas Jefferson's table, the author of *Crème Brûlée* repeated the story, with embellishments. So the myth goes on . . .

It makes a good story, but secondary sources are not the most reliable. Although they too may contain inaccuracies, primary sources are better. A careful investigator will explore a number of them and a chronological survey can provide much food for thought.

English herbalists of the 17th and 18th centuries make a good starting point. John Gerard, perhaps the most well-known, wrote of "Apples of Love."

In Spaine and those hot regions they vse to eat the Apples prepared. and boiled with pepper, salt and oile: but they yeeld very little nourishment to the bodie, and the same nought and corrupt.

*Likewise they doe eat the Apples with oile, vineger and pepper mixed together for sauce to their meat, euen as we in these cold Countries doe Mustard.*³

His comments sound like today's remarks about junk food. He did include both geographic and cultural information.

Another 17th-century herbalist included tomatoes in both of his books. In one, *"In the hot Countries where they naturally growe, they are much eaten of the people, to coole and quench the heate and thirst of their hot stomaches."*⁴ In his other book, the information was similar.

*...[tomatoes] are cold and moist...are eaten with great delight and pleasure in the hotter Countries, but not in ours, because their moisture is flashy and insipide, for want of the sufficient heate of the Sunne in their ripening.*⁵

Later herbalists provided, a cultural comparison: *"In Italy they eat them with Oil and vinegar as we do Cucumbers."*⁶ Another author said essentially the same thing: *"The Italians eat the fruit as we do Cucumbers."*⁷ Cucumbers were grown in England and were eaten both fresh and pickled. Occasionally they were stewed, to be served with mutton.

A gardening manual, the most popular in the 18th century, provided information about using tomatoes as food.

The Italians and Spaniards eat these Apples, as we do Cucumbers (sound familiar) with, Oil, and Salt; and some eat them stew'd in Sawces, &c. and in Soups they are now much used in England,...

*This Fruit gives an agreeable Acid to the Soup, though there are some Persons who think them not wholesome, from their great Moisture and Coldness, and that the Nourishment they afford must be bad.*⁸

The comment about moisture and coldness refers to the humoral doctrine. Eating such foods without balancing them with hot dry things was thought to lead to ill-health. For more information about healthful combinations, see John Evelyn's book on salads.⁹

Other gardening books, like *Every Man His Own Gardener*, also contained information about growing tomatoes.¹⁰

A late 18th-century nurseryman in Philadelphia included Love Apples in his catalogue, in the kitchen garden section.¹¹ By that time, early medicinal applications for this fruit had been discontinued; tomatoes do not appear in the two major 18th-century pharmaceutical manuals.¹² The most popular 18th century gardening book in the United States was published in Philadelphia in 1806. Tomatoes were included as kitchen garden plants.¹³

An English household book published information about the fruit, equating the names "love apples" and "tomatoes."

"Love-Apples... The fruit of the wild sort is no bigger than a cherry; but those that grow in gardens are as big as a small apple, very round and red, and therefore called pomum amoris; some call them tomatoes. It hath a small sharp-pointed jagged leaf, growing very thick upon its stalk and branches; its fruit is round and red, or of an orange colour. I have eat five or six raw at a



time: They are full of a pulpy juice, and of small seeds, which you swallow with the pulp, and have something of a gravy taste... the fruit, boiled in oil, is good for the itch."

~ Henry Barham, *Hortus Americanus* (1794)

out-of-season use in Italy.

*...some doe eat them raw, as Cowcubers, some doe roast them under the Embers, and others doe first boyle them, pare them and slice them: and having a liittle pepper and salt, serve them to the table. Some also doe keepe them in pickle, to serve for to spend in the Winter and Spring:...*¹⁸

The references given make it clear that some English colonists were aware of tomatoes as an ingredient in various dishes. Some secondary sources have been saying this for years: "...by the end of the 16th century, the literature establishes wide knowledge of the tomato and its use as food."¹⁹ Andrew F. Smith, a noted food historian, wrote a book on tomatoes. He said, "The tomato was consumed and cultivated by some Americans during the 18th century in all regions of the country, including the South, the Midwest, New England, California and the American Southwest."²⁰ I have found references for Pennsylvania as well. In his book on ketchup, he said, "An American who supported, the British during the Revolution reportedly made tomato ketchup in New Jersey prior to the time he moved to Nova Scotia in 1782."²¹

It took a long time for tomatoes to achieve their present popularity. It may be that tomatoes were difficult to grow in the grey, damp, cool English climate. Today, the English can enjoy tomatoes at every meal of the day if they wish, but all tomatoes

The first comment is brief: "There is also another fruit that just comes in Season in July this is the Tomato, used by many in Soups, and very well deserving to be brought into universal Practice."¹⁴

The second, has more, much more!

There is a fruit of a particular Kind that now comes into Season, this is properly called the Lone [sic; Love] Apple, but in our Markets it is better known by the Spanish Name tomatoe; it is as big as an Apple, ribbed, and red. It is the Fruit of a Plant of the Nightshade Kind, but is perfectly whole-some: Soups are made very agreeable by this; the Jews in England mostly eat them, but in the warmer Parts of Europe, they are a common Food at every Table.

*Some eat them alone, but they are best in Soup, to which they give an agreeable flavour.*¹⁵

Her very definite point about the wholesomeness of tomatoes directly contradicts the reason many people give me about the belief that tomatoes were considered poisonous.

An English cookbook was published in Philadelphia in 1791 and 1792. It include a receipt for haddock in the Spanish fashion. The cook was directed, to "...pare half a dozen love-apples and quarter them, when in season, put them in,..."¹⁶ It would seem that tomatoes would only be used during late summer and autumn, when they were "in season." For out-of-season use, one woman wrote the following: *To Keep Tomatoes for Winter use Take ripe Tomatas, peel them, and cut them in four and put them into a stew pan, strew over than a great quantity of Pepper and Salt; cover it up close and let it stand an Hour, then put it on the fire and let it stew quick till the liquor is intirely boild away; then take them up and put into pint Potts, and when cold pour melted butter over them about an inch thick. They commonly take a whole day to stew. Each pot will make two Soups.*

*N.B. if you do them before the month of October they will not keep.*¹⁷

An herbalist mentioned earlier provided some information about

there are grown under cover. We can grow them, including "heirloom" varieties in our yards, on our decks, etc. and can buy them year-round at the store.

It is too bad that people do not bother with sources available in the period they are discussing. Relying on secondary sources can mean the perpetuation of the mistakes or misconceptions of past writers -- the equivalent of a non-spoken whisper down the lane transmission of information. It is evident from 18th-century material available in "the world of William Penn" that some colonists were growing, eating, and enjoying (we assume) tomatoes. Let's spread the word... AGAIN!

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About the author

Clarissa F. Dillon received her doctorate in History from Bryn Mawr College and has been involved in "living history" since 1973. She has long tried to dispel the myth about tomatoes being considered poisonous. She designed and interpreted a display, "They did too eat Tomatoes" for the John Bartram Association at the Pennsylvania Horticultural Society's Harvest Show in September 1990. She had an article, "Exploding a Historical Myth About Tomatoes," published in *Living History*, Vol. 1, No. 2, Summer 1991. Its original title was "They Did Too Eat Tomatoes" but the editor insisted that it be changed. She also wrote an article, "Tomatoes, also called Love Apples, " for a column entitled "Mythbustherth" in *PAST Masters' News*, Vol. 8, No. 3, Summer 2005. She was delighted to receive a documentation for tomatoes as food from Joel Fry at Bartram's; that meant she could include tomatoes in the revised dissertati on she makes available to historic gardeners and cooks.

The Universe in the Rearview Mirror: How Hidden Symmetries Shape Reality

by Dave Goldberg

Publisher: Dutton Adult (July 11, 2013) Hardcover: 352 pages
ISBN-10: 0525953663 ISBN-13: 978-0525953661

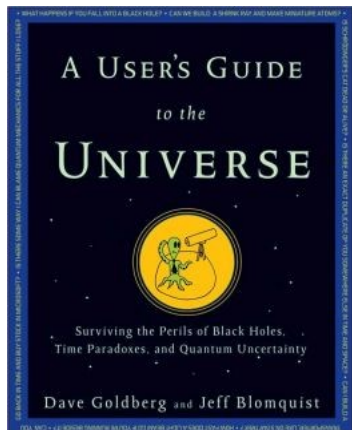
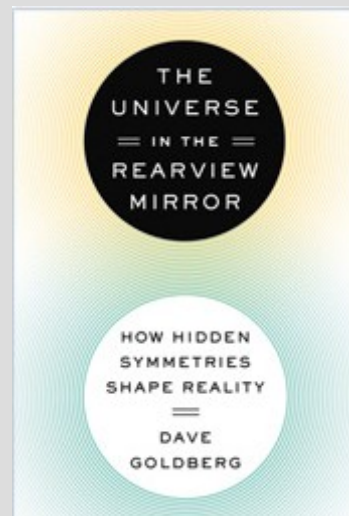
A physicist speeds across space, time and everything in between showing that our elegant universe—from the Higgs boson to antimatter to the most massive group of galaxies—is shaped by hidden symmetries that have driven all our recent discoveries about the universe and all the ones to come.

Why is the sky dark at night? Is it possible to build a shrink-ray gun? If there is antimatter, can there be antipeople? Why are past, present, and future our only options? Are time and space like a butterfly's wings?

No one but Dave Goldberg, the coolest nerd physicist on the planet, could give a hyper drive tour of the universe like this one. Not only does he answer the questions your stoner friends came up with in college, but he also reveals the most profound discoveries of physics with infectious, Carl Sagan-like enthusiasm and accessibility.

Goldberg's narrative is populated with giants from the history of physics, and the biggest turns out to be an unsung genius and Nazi holocaust escapee named Emmy Noether—the other Einstein. She was unrecognized, even unpaid, throughout most of her career simply because she was a woman. Nevertheless, her theorem relating conservation laws to symmetries is widely regarded to be as important as Einstein's notion of the speed of light. Einstein himself said she was "the most significant creative mathematical genius thus far produced since the higher education of women began."

Symmetry is the unsung great idea behind all the big physics of the last one hundred years—and what lies ahead. In this book, Goldberg makes mindbending science not just comprehensible but gripping. Fasten your seat belt.



A User's Guide to the Universe: Surviving the Perils of Black Holes, Time Paradoxes, and Quantum Uncertainty

by Dave Goldberg

Publisher: Wiley; 1 edition (February 1, 2010) Hardcover: 304 pages
ISBN-10: 0470496517 ISBN-13: 978-0470496510

Answers to science's most enduring questions from "Can I break the light-speed barrier like on Star Trek?" and "Is there life on other planets?" to "What is empty space made of?"

This is an indispensable guide to physics that offers readers an overview of the most popular physics topics written in an accessible, irreverent, and engaging manner while still maintaining a tone of wry skepticism. Even the novice will be able to follow along, as the topics are addressed using plain English and (almost) no equations. Veterans of popular physics will also find their nagging questions addressed, like whether the universe can expand faster than light, and for that matter, what the universe is expanding into anyway.

Gives a one-stop tour of all the big questions that capture the public imagination including string theory, quantum mechanics, parallel universes, and the beginning of time

Explains serious science in an entertaining, conversational, and easy-to-understand way

Includes dozens of delightfully groan-worthy cartoons that explain everything from special relativity to Dark Matter

Filled with fascinating information and insights, this book will both deepen and transform your understanding of the universe.

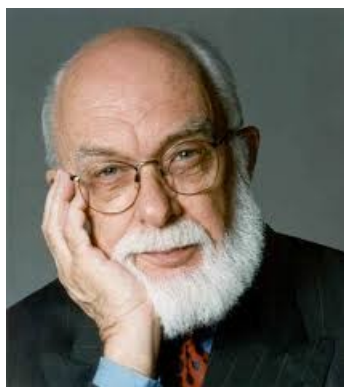


Fourth Annual Philadelphia Science Festival

Friday, April 25 - Saturday, May 3, 2014

www.philsciencefestival.org

For the fourth year in a row, Philadelphia's museums, parks, libraries, restaurants, and bars will play host to nearly 100 events-many FREE-celebrating science and technology.



The Amazing James Randi

In 2013 PhACT was host to The Amazing Randi for a fascinating lecture at the Franklin Institute touching upon many areas of science and Critical Thinking.

This year, 2014, PhACT will host Michael Shermer, founder of the Skeptics Society, and editor-in-chief of Skeptic Magazine, for what is bound to be a provocative lecture to be held on Monday evening, April 28, 2014 at Community College of Philadelphia.



Michael Shermer



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>

Lectures

Wednesday, April 16, 2014 at 6:00 PM

'Putting the X and Y in SEXY' - How chromosomal genes turn us into boys, girls, and sometimes a bit of both.

An Illustrated Presentation By Scott Gilbert, Swarthmore College.

Please register for this free event.



Hermaphrodite (Pitch Card), Unknown Photographer, early 1900's

The idea that mammals with two X chromosomes become females while mammals with an X and Y chromosome become males was discovered in 1905, but scientists are still uncovering how the genes on these chromosomes cause the development of testes and ovaries and how these organs organize tissues to become either male or female. Males and females take the same parts and modify them in different

ways—we're only now figuring out how this is done. Sometimes, there is a disconnect between what the genes say we are and how we actually turn out. Maybe it is time to redefine our two-sex world.

Dr. Scott Gilbert is the Howard A. Schneiderman Professor Emeritus of Biology at Swarthmore College. His award-winning research looks at the ways in which evolution is a product of embryological changes. He is the author of three textbooks and has published extensively in academic journals. The recipient of numerous awards, Gilbert is a Finland Distinguished Professor at the University of Helsinki.

Friday, May 2, 2014 at 5:30 - 8:30 PM

The Magical Mushroom: How a Little Spore Can Save the World - Can mushrooms save the world?

Famed mycologist Paul Stamets thinks so! Join us to learn about the incredible restorative potential of mushrooms for people and the planet and stay after the talk to sample a selection of mushroom varieties with local growers.



Tickets are limited, reservations ahead of time strongly recommended. Price: \$15 Reserve your tickets. This event is part of the Philadelphia Science Festival.

About The Wagner Free Institute of Science

THE FIRST 150 YEARS: A Brief History

The Wagner Free Institute of Science is a rare survival—a museum and educational institution that remains nearly unchanged from the nineteenth century. Its free public education courses on science, now in their 157th year, are the oldest program devoted to free adult education in the United States. In recognition of the importance of this free education mission and of its contributions to science education and research, the Institute was designated a National Historic Landmark by the United States Department of the Interior in December of 1990.

Formally incorporated in 1855, the Institute had its inception in a public lecture series begun in the early 1850s by founder William Wagner (1796-1885), a noted Philadelphia merchant, philanthropist, gentleman scientist, and lifelong collector of natural history specimens. Believing strongly that education in the sciences should be available to everyone, Wagner began offering free lectures on science at his home, Elm Grove, a colonial farm estate then on the outskirts of the city. To illustrate the lectures, he drew on the vast collection of specimens he had gathered since his childhood, including many he had acquired during the years he spent traveling around the world as an agent for the well-known Philadelphia financier Stephen Girard. These lectures became so popular that by 1855 he



**William Wagner
by Thomas Sully, 1836**

moved them to a public hall to accommodate the rapidly growing audience, and appointed a faculty to teach six evenings a week on subjects ranging from paleontology and chemistry to botany and architecture. All the classes were offered free of charge with an open admission policy that allowed women as well as men to attend. Based on the success of earlier lectures, in 1859 Wagner began construction on a building that would become the permanent home for his collections and his educational program. Designed by local architect John McArthur, Jr., who later designed Philadelphia's City Hall, the building was completed and opened to the public in 1865.

Wagner continued to lecture and lead the unique institution he had founded until his death in 1885. Direction then passed to a Board of Trustees who appointed Dr. Joseph Leidy, a biologist of international reputation, to head its scientific and educational programs. Joseph Leidy's appointment ushered in an active and productive era in which the Institute's mission and programs were greatly expanded. He invigorated the public lectures by retaining some of the most noted scientists and explorers of the day for the faculty. Leidy also added original scientific research to the Institute's programs and organized its earliest field expeditions. The results of this work were published in the Institute's own publication, *The Transactions of the Wagner Free Institute of Science*.

Leidy's most lasting and significant contribution to the Institute, however, was his reorganization of the museum. Wagner's original collections had been greatly enlarged by specimens collected in the field and through purchases and acquisitions. Leidy personally developed and supervised their reorganization into

a systematic display in which specimens and cases were arranged so that visitors moved from simpler to more complex organisms and through geologic time as they walked through the exhibition hall. This new display opened in 1891 and little has been altered since Leidy's time, making the Institute an exceptional example of a Victorian science museum.

By the turn of the century, the Institute was a leading force in public education in Philadelphia. It was an early participant in the groundbreaking University Extension movement in the city and in 1892, the Institute opened the first branch of the Philadelphia public library system. Owing to heavy usage of the library, in 1901 the Institute added a west wing to its building for use by the Free Library.

Today, the Wagner Free Institute of Science is widely recognized as one of Philadelphia's historic treasures. While preserving its historic building and collections for future generations to enjoy, the Institute also serves as a rich educational resource for programs on science, natural history, and the history of science from the nineteenth century to the present.

THE MUSEUM

The Wagner Institute's natural history museum contains more than 100,000 specimens illustrating the various branches of the natural world. The Museum includes founder William Wagner's mineral collection - one of the oldest in the country - and his fossil collection, representing many important European and American localities and collecting sites of the nineteenth century. Mounted animal skeletons, skulls, and skins; birds; an extensive regional entomological collection; and shells from around the



Case 81

world are on display, along with fossils collected on Institute-sponsored expeditions to the American South, Northeast, and Mid-Atlantic regions, as well as the Caribbean. Specimens collected on Institute expeditions include many "type specimens," the first identification of a new species. Perhaps the best-known of these specimens is the North American saber-toothed cat, *Smilodon floridanus*, discovered in 1886 on an Institute expedition to Florida. These fossils are on display in the exhibition hall near dinosaur bones collected by noted paleontologist and Wagner lecturer, Edward Drinker Cope. All specimens are displayed in the cherry wood cases constructed for them in the 1880s, and many retain the original handwritten curator's labels.

The specimens are arranged especially for study. The exhibit is one of the largest systematically-arranged collections on display in the country. It also serves as a

resource for scholarly research.

The Museum is open to visitors Tuesday through Friday, 9 AM to 4 PM for self-guided tours. Schools and organized groups of more than six people are asked to phone in advance for reservations by calling 215-763-6529, ext. 17. Reservations should also be made in advance of a visit by researchers requiring special access to the collections (ext. 14). Children under the age of 18 must be accompanied by adults. Admission is free; donations are encouraged.

Filming and photography are not permitted in the Institute. Exceptions are made for researchers, the press and other professionals on a limited basis, but arrangements must be made in advance. A fee may apply. To inquire about these policies email: photorequest@wagnerfreeinstitute.org or call 215-763-6529, ext.14.



The Exhibition Hall, circa 1900

GUIDED TOURS

As part of its educational programming, the Institute offers tours of its historic museum and lessons on a range of topics in the natural sciences to school classes, after-school programs, scout troops, homeschool groups, camps, and science clubs (see page 8 for more information about lessons for children's groups).

Guided tours of its National Landmark building are available by appointment. These tours include a slide presentation in the lecture hall where Joseph Leidy, Edward Drinker Cope, and Margaret Mead once taught, and a guided walk through the reference library and museum exhibits. The Institute's interior is nearly unchanged since the 1890s and offers a unique encounter with the past - an unparalleled experience of a Victorian science collection.

For more information about the Wagner and its events visit their website: www.wagnerfreeinstitute.org

Book Review

Beyond All Religion

by Samuel Butler

ISBN 978 - 0 - 9852359 - 0 - 1 \$9.95, Shinelight Publ., FL (2012)

(Religion/Spirituality)

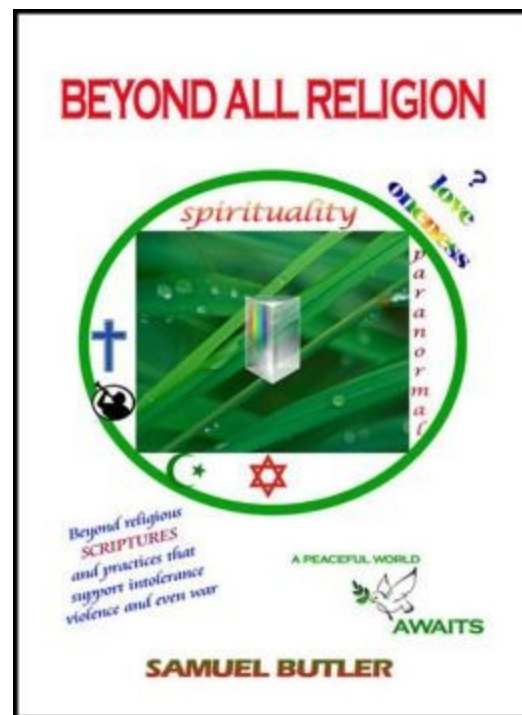
Samuel Butler's book appears to be a collection of many articles and commentaries which he has compiled in his search to find a better course for humanity than that which religion has taken over the past few millenia. His subtitle reads: "Beyond Mythical and Outrageously FORGED Religious Origins, and SCRIPTURES and Practices that Support Intolerance, Violence and even War."

In 144 pages (incl. an index and some references), Butler reaches for the often shocking subtexts and messages offered by Christianity, Islam, Judaism, Mormonism, Buddhism, and other world faiths. He delves into the history most of us have never examined in an effort to demonstrate the sources of these modern mythologies, and to reveal their similarity to far more ancient belief systems. Along the way, he mines the skeptical literature for quotes new and old. Some tidbits will be familiar to all readers, while many will surprise even the long-time religious skeptic.

Butler's book could clearly benefit from a professional re-editing, and in many places his statements beg more thorough reference. In several places, his later chapters do clarify and expand upon earlier statements, so a patient and thorough reading is recommended. The book is one I managed to read in a single afternoon, and it is arranged in sections which can be fit into even the shortest breaks in a reader's day; a complete reading should be within any adult reader's convenient ability.

Butler begins with acknowledgement that no believer can be dissuaded by mere facts and truth, and I inadvertently verified this when I described the book to a friend who is firmly bound to his beliefs. While the book can not be said to encompass the final authority on any of its many topics, it never set out to be more than a stepping-off point in an open-minded reader's journey into (a clearly blasphemous) review of some of the more questionable tenets of faith in the major religions. The book should be debated and discussed by people with a specific interest in reviewing its viewpoints and seeing where reason carries its conclusions. I would highly recommend this as preparation for a long trip in the company of other skeptics who enjoy conversation.

I happen to have a Bible which I keep handy for reference purposes, and I indulged in some light fact-checking as I read. Butler is often dead on with his interpretation of Scripture, but at other times I also found his interpretations to be a bit stretched. He is at his best in bringing together the widespread opinions of other religious skeptics, and mixing everything up in an effort to make his case. In the end, ignoring a few quibbles, I'd say Butler made a respectable effort and advanced many interesting points. This book is recommended as an excellent entry-level provocation to anyone interested in reviewing the flaws in organized religion and its practice in the world. His accessible text will probably appeal to many who would stumble and quit when presented with denser academic treatments of the subject.

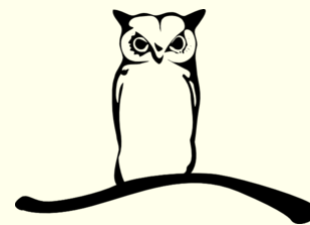


Shinelight Publications
12355 SW 129 Court, Ste. 10 - 197
Miami, FL 33186 - 6406

Reviewed by Paul Schlueter III

Off the Beaten Path

By Kim A. Sheridan



For Want of a Horseshoe

They come out of the sea at night. Thousands of them, clad in hard armor with sword-like tails, swarming onto New Jersey bay beaches in the spring. They are horseshoe crabs, a blue-blooded marine creature that has remained nearly unchanged since its debut in the Paleozoic Era. And they have come ashore in response to a need as old as time, the need to mate.



Horseshoe crabs at Reed's Beach, May 26, 2013

Horseshoe crabs spend most of their time in shallow ocean waters where they feed on mollusks and worms. Their long pointy tails are used not for defense, but to flip themselves upright when they overturn. Contrary to their name, they are not crabs, but marine arthropods, whose closest relatives are spiders and scorpions.

In the spring, during the highest tides and mostly at night, horseshoe crabs come ashore to mate and lay eggs. Females lay thousands of soft, easily digestible, high fat eggs a year.

In other words, perfect food for migrating shorebirds.

Responding to cues we humans can't comprehend, over a million shorebirds descend on Delaware Bay beaches in May, just in time for the peak

of horseshoe crab mating season. Dunlins, red knots, ruddy turnstones, sanderlings, short-billed dowitchers, and semipalmated sandpipers have all flown thousands of miles, with many more to fly before reaching their Arctic breeding grounds. Of the shorebirds, the *rufa* subspecies of red knots has traveled the farthest. Each spring they will fly 9,300 miles, from Tierra del Fuego to the Arctic. These shorebirds have lost a great deal of weight



Red Knot among Semipalmated Sandpipers at Fortescue

along the way. What they need now is high-fat, nutritious food, and lots of it. Horseshoe crab eggs will do quite nicely.

But the red knot is in deep trouble. Before the 1980s as many as 150,000 migrated through the area, but the population has dropped by a factor of ten since 2003, according to NJ Fish & Wildlife.

Why? Well, here we are back at the horseshoe crabs again. Their numbers have also dropped precipitously. The Delaware Bayshore population that once numbered 2 million is now down to 200,000.

Human activity and development of beach areas has put pressure on horseshoe crabs. They are collected to be bled for a substance that plays an important role in medical testing. Recently, they have

been extensively harvested for use as bait to catch eel and conch for the lucrative Asian market. The years between 1990 and 2005 saw a drop of 88% in horseshoe crab numbers and a corresponding drop



Short-billed Dowitcher and Dunlin at Fortescue

in egg density of a staggering 98%.

Efforts are underway to help horseshoe crabs and shorebirds alike. In 1998 the Atlantic State Marine Fisheries Commission developed a horseshoe crab management plan establishing harvest quotas, and in 2008 New Jersey enacted a complete moratorium. Horseshoe crabs take 9 to 10 years to reach maturity, however, so breeding population recovery as of 2010 has been minimal. Last fall the U.S. Fish and Wildlife Service proposed listing the *rufa* red knot as threatened under the Endangered Species Act.

For want of a horseshoe crab, the eggs were lost; for want of the eggs, the red knot could be lost. If shorebirds are to thrive, the prehistoric horseshoe crab must also endure.



Cooks Beach

Good locations in New Jersey for viewing the horseshoe crab and shorebird spectacle include Fortescue, Reeds Beach, Cooks Beach, Kimbles Beach, and Norburys Landing. All of these places, particularly Reeds Beach, are at the end of narrow roads. Please be respectful of the residents, obey all speed limits, and park carefully.

The best time to see the shorebirds is in May and early June, at the full and new moons especially. During shorebird migration season, the New Jersey Division of Fish and Wildlife restricts beach access to protect the birds. Please remain in designated viewing areas and don't stress the birds by venturing onto the beaches.

To see the shorebirds, binoculars are essential, and a spotting scope is a great bonus. Photographers will want a long lens and a tripod. Don't forget sunscreen and a hat.

New Jersey Audubon's Delaware Bayshore Guide has directions and information about Reeds Beach, Kimbles Beach, and Norburys Landing:

http://www.njwildlifetrails.org/DelawareBayshore/Sites/tabid/440/Scope/loop/Guide/DELBAYSH/Loop/CM_BAY/Default.aspx

New Jersey's Division of Fish and Wildlife has an PDF that includes directions to Fortescue as well as other sites here:

<http://www.nj.gov/dep/fgw/ensp/pdf/delbayshrbirds.pdf>

USFWS Red Knot portal:

<http://www.fws.gov/northeast/redknot/>

Cornell Laboratory of Ornithology's eBird database project will have the latest shorebird sightings:

<http://ebird.org/ebird/eBirdReports?cmd=Start>

For an in-depth look at the horseshoe crab-red knot conservation issue:

http://www.njfishandwildlife.com/ensp/pdf/literature/crab-harvest_delbay_knots.pdf

http://www.whsrn.org/sites/default/files/file/Red_Knot_status_update_2011_Dey_et_al_11_05-28.pdf

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.

Homo keepupwithus: The Ever-Evolving Story

by Paul Schlueter III

It is becoming quite a challenge to keep up with the latest discoveries in paleontology and human origins. If your attention wanders, you might miss the announcement of several new reports, some of which are quite remarkable.

Two landmark studies were described in the November 16, 2013, Science News issue. On page 6, Bruce Bower wrote an analysis titled "Fossil could prune human family tree," and on page 13, he wrote one titled "Ancient farmers, foragers kept genes to themselves." Each story covers a discovery which reshapes our understanding of how human evolution occurred, at different points in time.

I should plug Science News here. Their new Editor in Chief, Eva Emerson, has taken the magazine in a new direction, revamping its format and extensively re-working their internet presence. If you haven't subscribed before, now would be the time to reconsider that choice! Go to subs@sciencenews.org for a \$54.50 annual subscription including the internet access (by phone, it's 1-800-552-4412.) The Society for Science & the Public is a nonprofit organization founded in 1921, and for science-minded people, SN could easily serve as the sole general news publication needed to stay abreast of developments in all the rational sciences.

Bower's article on the human family tree discusses the study of five fossils found at a single site, apparently the remains of humans consumed within the lair of a single predator within a very narrow window of time. These five skulls were found at Dmanisi, in the country of Georgia, and studied by David Lordkipanidze of the Georgian National Museum in Tbilisi, a paleoanthropologist. His conclusion was that there was a far greater diversity in skull size and shape than previously recognized among Homo erectus individuals at around 1.8 Mya, which suggests that specimens identified as belonging to other species were probably just variants

within the H. erectus species. By comparison, he finds that several "subspecies" fall within a range of variation comparable to that found in modern chimps, or in modern humans. Therefore, H. habilis, H. rudolfensis, and H. ergaster might very well have all been variants of H. erectus all along. The discovery was also briefly discussed in a recent issue of The Week. In contrast, Bernard Wood (George Washington University at Washington, D.C.) thinks that substantial differences in the skulls, limbs, and extremities indicate that H.

habilis was a species distinct from H. erectus. Thus, the debate continues.

The point here is, a population of pre-modern humans left Africa nearly 2 Mya, and dispersed throughout Europe and Asia, including the Far East. Even within the geographical range of a single predator, individuals of this proto-human species looked different enough that modern science has classified them as separate species, though they may well have all been members of

a single population (and thus, of just one species which interbred freely). For this group to have dispersed across the Old World, and then engaged in both localized procreation (for the majority, one might expect) and in more-limited interbreeding among more-distant populations during trade or exploration (for the minority who would have pursued those activities), opens up a different perspective on how regional populations (what we might consider "races," in modern terms) developed.

It is thought that H. neanderthalensis eventually developed from the European group (called H. heidelbergensis) which had left Africa around 500 Kya, and which undoubtedly interbred with whichever proto-humans who were in Europe at the time. Different waves of people coming out of



A skull, possibly from a new species of human, recovered from Longlin cave in Guangxi province, China.

See article in *The Guardian*, Wednesday, Marh 14, 2012

<http://www.theguardian.com/science/2012/mar/14/red-deer-cave-people-species-human>

Africa at different times, breeding with separately-evolved diasporic populations they encountered as they travelled, left traces in fossil, and even living human, DNA which are only now coming to light.

In an article from Nature (19 November, 2013, by Ewen Callaway, titled "Mystery humans spiced up ancients' sex lives"), further analysis of the specimens found in the Siberian cave called Denisova show genetic traces of four distinct populations; "modern humans," Neanderthals, Denisovans, and a fourth group now recognized as being distinct from both human and Neanderthal genealogy (see: <http://www.nature.com/news/mystery-humans-spiced-up-ancients-sex-lives-1.14196>). The Denisovans, first discovered in that cave, were apparently widespread throughout Asia and Oceania, leaving especially large genetic traces in modern populations in Papua New Guinea and Australian aborigines. It was the Denisovans whom apparently interbred with the fourth Asian population, some 30 - 50 Kya. You may recall that there have been recent finds in Asia which have been proposed to represent a subspecies which evolved there, from *H. erectus* (see "Another Ancestral Species?" in the August/Sept., 2012, Phactum), called the Red Deer Cave People, specimens of which were found and dated to 11.5 to 14.3 Kya in south-central China. It is not yet clear if the distant cousins of the Denisovans were the same group's ancestors, or a distinct branch altogether. It amazed many scientists that Denisovans existed; now, DNA studies have shown that there's a population we know of SOLELY through DNA (at least we have a couple fossil remains of Denisovans themselves).

While such discoveries are filling in our understanding of ancient proto-humans and the earliest "modern humans" (you know... us!), Bower's other article describes a much more recent time period.

The practice of farming seems to have been introduced in Europe around 7,500 years ago. According to new studies, agricultural and hunter/gatherer societies lived side-by-side in Europe, BUT DID NOT INTERBREED, for some 2,000 years! How astonishing is that? After all, the image many of us have of human breeding practices seems to indicate that we'll "get it on" with just about anybody we meet, wherever we may wander (see "Human Sexuality and Evo Devo," Phactum, March 2011). 25 individuals buried in a German cave (five from thousands of years before agriculture, and 20 from between 4.9 and 6 Kya) were shown to have come from separate populations by forensic chemical analysis that deter-

mined their primary food source, fish or domestic animals. The fish-eaters shared mitochondrial DNA with the pre-agricultural population, but NOT with their contemporary farming neighbors. For at least this one group who shared a common burial cave, the distinction between livelihoods appears to have been sufficient to discourage interbreeding, over a period as long as that during which Christianity has existed! That sort of social segregation seems extraordinary, even to the point of becoming incredible. Yet, a second study not only underscores the point, but extends it. 364 specimens from elsewhere in Germany were analyzed, and their DNA shows that the farming group remained genetically distinct until 5 Kya, or closer to 2,500 years overall.

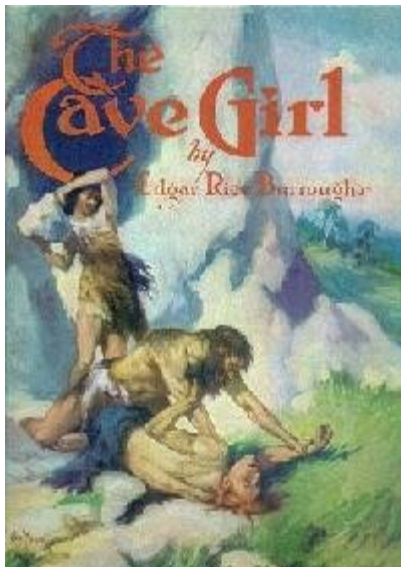
The first farmer study was done by Ruth Bollongino, of Johannes Gutenberg University of Mainz, and was reported in Science on Oct. 10, 2013. The second study was done by Guido Brandt, working independently of Bollongino but at the same institution, and reported in Science on Oct. 11. It appears that European cultures began mixing more effectively between 5 Kya and 4 Kya, with both Scandinavian hunter/gatherers and some bronze-working cultures mixing genetically into the Central European genome.

One can only begin to imagine the wealth of genetic information that might be uncovered if we had better relations with Chinese scientists. That gigantic region obviously contained a variety of ethnic groups over the ages, and their recent announcements of fossil discoveries (not only proto-human, but far back into geological time) indicate that East-

ern Asia has much evidence to add to the world's pool of knowledge. China encompasses large desert regions, which have served to either mummify or fossilize the remains of many species over the eons. I expect that there will likely be a focused effort to now identify the Asian group that Denisovan DNA indicates from 30 Kya, and to see if that can be matched with the Red Deer Cave People from 12 Kya. As other scientists begin to use the techniques for genetic reconstruction being developed by Svante Pääbo at the Max Planck Institute, scientists will quickly discover new links between ancient specimens' DNA, revealing cultural relationships that are sure to amaze us even further in the future.

Paul Schlueter III is serving Life in Prison in NE Pennsylvania. His supporters have created a website about him.

www.jaylbird.org



Dust jacket from Edgar Rice Burroughs' 1925 novel, *The Cave Girl*. Perceptions have changed since then, at least in science circles.

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.**

Monday, April 28, 2014 at 7:30 PM - Lecture by Michael Shermer. The Believing Brain: From Ghosts and Gods to Politics and Conspiracies – How We Construct Beliefs and Reinforce Them as Truths

Synthesizing thirty years of research, **Michael Shermer** upends traditional thinking about how humans form beliefs about the world. Simply put, beliefs come first, and explanations for beliefs follow. The brain, Shermer argues, is a belief engine. Using sensory data that flow in through the senses, the brain naturally looks for and finds patterns — and then infuses those patterns with meaning, forming beliefs. Once beliefs are formed, our brains subconsciously seek out confirmatory evidence in support of those beliefs, accelerating the process of reinforcing them — and round and round the process goes in a positive feedback loop. Shermer provides countless real-world examples of how this process operates, from politics, economics, and religion to conspiracy theories, the supernatural, and the paranormal. And ultimately, he demonstrates why science is the best tool ever devised to determine whether or not our beliefs match reality.

Dr. Michael Shermer is the founder of the Skeptics Society and is Publisher of *Skeptic* magazine, a monthly columnist for Scientific American, an Adjunct Professor at Claremont Graduate University and Chapman University, and the author of *The Believing Brain*.

**At the Auditorium of the Bonnell building off 17th Street at the Community College of Philadelphia
This is not our usual meeting location.**

Check this website for a campus map: <http://www.ccp.edu/about-us/locations/main-campus>. The Bonnell building is the building marked "B" on the map. We'll have signs posted to the meeting room from the building lobby. The main parking garage will be open for this meeting.

Admission is FREE and Open to the Public.

Saturday, May 17, 2014 - PhACT Scientific Expedition

Don Nigroni, a longtime PhACT member, naturalist, and monster hunter extraordinary, will lead another monster/ghost hunting expedition. Past failures to capture the Jersey Devil and the Ape Boy of the Chester Swamps do not deter enthusiasm for future success in such ventures. **See page 5 for more details.**

Saturday, June 21, 2014 - PhACT Picnic

10:00 to 2:00 at Mondauk Common Park (our usual location) . See page 5 for more details.

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. 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, April 14, 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 brought to you by the Mutter Museum of the College of Physicians of Philadelphia.

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

<http://scienceontapphilly.com/>

Wednesday, April 16, 2014 at Noon at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

http://www.collphyphil.org/prog_calendar.htm

Food & Thought: Parade's End -- The Life of a Country Doctor

Michael Gross, MD, made the transition from fast track academics to the medical culture of small town America just in time to experience the end of the horse-



and-buggy solo practice days, and then the transition to the modern era of corporate medicine. Just as the protagonist of Ford Madox Ford's "Parade's End" found the old social rules and morality challenged by the 20th century, we are watching the old ways of practice and the old professional morality reacting to the stress of technology and economics. Is there still space for solo practice? An educated generalist? Professional courtesy? Primary loyalty to patients? And what will rural practice look like? These questions and more will be addressed in what is sure to be a fascinating lecture on the topic.

Speaker: Michael Gross, MD, MPH

Cost: \$13.00 includes lunch.

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

Wednesday, April 16, 2014 at 6:00 PM at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

www.wagnerfreeinstitute.org ph 215-763-6529

'Putting the X and Y in SEXY' - How chromosomal genes turn us into boys, girls, and sometimes a bit of both.

An Illustrated Presentation By Scott Gilbert, Swarthmore College.

Please register. Free and Open to the Public.

Wednesday, April 16, 2014 at 7:30 PM at The Ethical Society at 1906 South Rittenhouse Square, Philadelphia. Freethought Society and the Ethical Humanist Society of Philadelphia are pleased to announce the return of Roy Zimmerman to the Philadelphia area. Zimmerman's "**Blue Dot Tour**" performance of original and funny songs about ignorance, war, greed, hope, struggle, change, and greed.

Admission is \$18, with \$15 for students and seniors

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

Wednesday, April 16, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Barbara Ehrenreich | Living with a Wild God: A Memoir

"Veteran muckraker" (The New Yorker) Barbara Ehrenreich is the New York Times bestselling author of 14 books, including the working class exposé *Nickel and Dimed* and *Bait and Switch*, in which she investigated the economic shadow world of white-collar unemployment. A journalist, historian, and social critic, she writes with great passion on subjects as varied as healthcare, sex, class, and families. In middle age, she came across the journal she had kept during her wild adolescence. In her new memoir, *Ehrenreich*—a staunch atheist and rationalist—sets out to reconstruct the philosophical and spiritual inquiry of her youth.

Free. No tickets required. For Info: 215-567-4341.

Cost: \$15 General Admission, \$7 students.

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

Saturday, April 19, 2014 at 7:00 PM at Barnes and Noble 102 Park Ave, Willow Grove, PA, Humanist Association of Greater Philadelphia (HAGP)

www.HAGP.org

HAGP Book Club: We will discuss the Faye Flam's *The Score: How The Quest For Sex Has Shaped The Modern Man*. Flam contends that the fundamental reproductive imbalance between males and females shapes the way men seek

love, take risks and view the world—and drives evolutionary strategies. (Note Faye Flam will attend in person to discuss her book with the group)
Cost: Free <http://fayeflamwriter.com/>



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 discussions group is free and open to the public. Join us and share your critical thinking, questions and opinions.

Saturday, April 19, 2014 at 4:00 PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

libwww.freelibrary.org/authorevents/

Vincent Feldman | City Abandoned: Charting the Loss of Civic Institutions in Philadelphia

Lifelong Philadelphia resident Vincent Feldman has spent the last three decades photographing the city's architectural character. As some of our most significant structures began to crumble, Feldman's photos increasingly focused on the conflicts and difficulties of historical preservation. A Master Lecturer in photography at the University of the Arts and recipient of a 2001 Pew Fellowship, Feldman has displayed his work at the Philadelphia Museum of Art and sold his work to patrons across the world. More than a photo collection, *City Abandoned* makes a passionate argument for preservation and renovation of some of Philadelphia's most important but neglected buildings. FREE. No tickets required. For Info: 215-567-4341.

Tuesday, April 22, 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: A talk by Carsten Reinhardt
Carsten Reinhardt, the Chemical Heritage Foundation's president and CEO, comes to CHF from Bielefeld University, Germany, where he has been a professor of the history of science since 2007

Thursday, April 24, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Amartya Sen | An Uncertain Glory: India and its Contradictions

Esteemed economist Amartya Sen received the Nobel Prize for his work on social choice theory, welfare economics, development economics, moral and political philosophy, and the economics of peace and war. With an impeccable record of advocacy for tolerance, pluralism, and harmony, he is credited with reintroducing ethics into economic discourse. A Professor at Harvard, Dr. Sen is the recipient of many honors, including the Bharat Ratna—the highest honor awarded by the President of India; the Eisenhower Medal; the French Legion of Honor; and the National Humanities Medal. His new book is "an urgent, passionate, political work" (New York Times Book Review), coauthored with longtime collaborator Jean Drèze, that makes clear the case that India—despite rapid economic growth—cannot move forward without making a significant investment in the essential needs of the people.

Cost: \$14 General Admission, \$7 Students

Friday, April 25 at 10:00am at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 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.

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: Nancy Wright

Friday, April 25, 2014 at 7:30 PM at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

ASTRONOMY NIGHT: STARGAZING from the CEMETERY

Grab a blanket and take a tour of the cosmos with local astronomers. As part of the Philadelphia Science Festival (www.philasciencefestival.org), over 20 venues in and around the city will play host to astronomy night star parties with amateur astronomers coming out en masse with their telescopes to show locals the wonders of the night sky. If you have your own telescope or binoculars, bring them along! Don’t forget to bring your own blankets, beach chairs, beverages and/or snacks! Laurel Hill will also offer a raffle, and an array of merchandise for sale. Relaxing and stargazing from Philly’s most ethereal site = a perfect way to end the week! Admission to the event is FREE and open to the public. For additional information, phone (215) 228-8200.

Saturday, April 26, 2014 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

SHADES OF ANIMALS AT LAUREL HILL

Animal influence is evident throughout culture—in art, sport, business, home, even personal names—and this inescapable connection to the non-human animal world infuses Laurel Hill Cemetery. From the man who was literally “dinner of shark” to the lions, birds, and other creatures adorning monuments at Laurel Hill; learn about the Cemetery’s animal magnetism as we traverse the North, South, and Central sections. We will navigate undulating grounds, ascend and descend terraced lands all while getting acquainted with the Cemetery’s animal “spirit” so please come prepared with comfortable footwear.

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

Saturday, April 26, 2014 at 3:30 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Afternoon Lecture - It's Not All about Sex, or Is It? The Place and Role of Mothers in Private Tomb Decorations

Dr. Violaine Chauvet, Assistant Professor of Egyptology, Liverpool University, speaks about a broad range of evidence, both iconographic and textual, regarding the visual presence of mothers in private tombs from the Old to the New Kingdom in Egypt. Sponsored by the American Research Center in Egypt—Pennsylvania Chapter. Admission: \$10; \$7, PennCard holders; \$5, students with ID; free for ARCE-PA members. For more information, visit www.arce-pa.org.

Sunday, April 27, 2014 at 1:30 PM at Upper Moreland Library, 109 Park Avenue, Willow Grove, PA

Humanist Association of Greater Philadelphia (HAGP)

www.HAGP.org

HAGP speakers series: Jennifer Bullock of

Independent Pennsylvanians will discuss efforts by independents to develop a non-ideological political movement to reform the two party controlled election process, so ordinary voters can impact on issues of public policy. Independent Pennsylvanians supports issues and campaigns at the local, state and national level designed to increase the visibility and power of the independent voter—now the fastest growing political force in America.

Cost: Free <http://www.paindependents.org/>

Sunday, April 27, 2014 at 9:30am and 2:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

EXPLORER SUNDAY: NATURE in the NECROPOLIS

What kind of nature can you find in a cemetery? As the first garden cemetery in the United States, Laurel Hill has plenty to share. On this nature walk, along with stories about some of our unique residents; you will identify some of the many interesting birds, occasional mammals, trees and plants that call the cemetery home. Finish by making your very own nature journal based on observations from your walk. As part of the Philadelphia Science Festival’s (www.philasciencefestival.org) Explorer Programs, this hands-on, interactive tour is recommended for middle-school aged children. All children must be accompanied by a parent or guardian. Families with younger children are welcome to visit the Cemetery on the same day and complete a self-guided nature scavenger hunt. Bring your own binoculars.

Admission to the event is FREE and open to the public; however, reservations are requested. For additional information or to reserve your space, phone (215) 228-8200 or email

aj@thelaurehillcemetery.org.

Guides: Steve Maurer and Bob Berghaier

Sunday, April 27, 2014 at 2:30 - 6:30 PM at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

<http://www.collphphil.org/prog>

Murder at the Mütter

A series of murders has occurred across the city. Several bodies have been found, each displaying a similar cause of death. Is this coincidence, or is it the work of a serial killer? Murder at the Mütter™ dives into the minds of killers past and present. Participants will interact with investigators and forensic experts to experience the science of criminal investigation and solve the mystery.

The afternoon includes three hours of programming followed by a 50 minute cocktail reception and light hors d'oeuvres.

Participants must be 18 years of age or older.

Program will begin promptly at 2:30 pm.

Tickets: \$40.00 (\$30.00 for College Fellows and Friends of the Mütter)

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

Monday April 28, 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/>

Monday April 28, 2014 - Chef Walter Staib from Philadelphia’s City Tavern and the star of the television show A Taste of History will speak to us on colonial cooking.

Tuesday, April 29, 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: A talk by Nick Harris

Nicholas Harris is a Ph.D. candidate at the University of Pennsylvania in the Department of Religious Studies. He has been finishing his dissertation, “Better Religion through Chemistry: Aydemir al-Jildakī and Alchemy under the Mamluks.”

PhACT Lecture

Monday, April 28, 2014

Michael Shermer, PhD, founder of the Skeptics Society and Editor-in-chief of Skeptic Magazine, will be the speaker at PhACT’s contributed event at the Philadelphia Science Festival. Note that this lecture will neither be at the usual meeting location or time.

Tuesday, April 29, 2014 at 7:00 PM at the Ludington Library, 5 South Bryn Mawr Avenue, Bryn Mawr, Pennsylvania. The Freethought Society (FS). <http://www.ftociety.org/>

FS President Margaret Downey will moderate and interview science writer Faye Flam on a wide variety of subjects relative to today’s science and social interaction in what will be an evening of conversation no one will want to miss. Audience participation will also be incorporated.

Free and open to the Public.

Tuesday, April 29, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103 <http://libwww.freelibrary.org/authorevents/>

Ralph Nader | Unstoppable: The Emerging Left-Right Alliance to Dismantle the Corporate State

- Ralph Nader “singlehandedly sparked a new era of citizen-driven political and consumer activism (Publishers Weekly) and is largely responsible for major federal consumer protection laws such as the Clean Water Act, the Clean Air Act, and the Freedom of Information Act. His scathing critique of the American auto industry, Unsafe at Any Speed, was instrumental in the passage of the National Traffic and Motor Vehicle Safety Act. Nader has written a score of popular books and has been a five-time third-party Presidential candidate. His new book calls for bipartisan grassroots activism in the face of corporate influence in American politics.

FREE. No tickets required. For Info: 215-567-4341.

Tuesday, April 29, 12:30 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Brown Bag Lecture - Rethinking the Criminal Market in Transnationally Trafficked Archaeological Antiquities

Visitors hear from Jessica Dietzler, Ph.D. candidate in the "Trafficking Culture" Project at the University of Glasgow. Sponsored by the Penn Cultural Heritage Center. Free admission. For more information, visit www.pennchc.org/calendar.htm

Wednesday April 30, 2014 at 7:00 PM-8:30 PM at The Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia 19103 www.ansp.org 215-299-1108

The Cheryl Beth Silverman Memorial Lecture featuring Carl Safina.

Mr. Safina will present "Caught in the Same Net: The

Ocean and Us."

Fisheries, coral reefs, forests, climate change, poverty, literacy for girls, and peace—these are all facets of the same issue. Drawing on two acclaimed recent books—*The View From Lazy Point* and *A Sea In Flames*—scientist and author Dr. Carl Safina weaves a story that is both deeply personal and broadly global. Sharing travels that take us from his Long Island beach house to the high Arctic, Antarctica, and across the coastal tropics, he shows how the changes he has witnessed challenge not just nature but all of humankind. Safina also discusses how science has ethical implications, how religion and science are converging toward common cause on environmental matters, and how moral responses can lead us to crucial solutions. Free and open to the public. Registration requested at:

anscarsafina.eventbrite.com

Wednesday, April 30, 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.collphyphil.org/prog_calendar.htm

The Inaugural Bernard Behrend, MD Lecture: Women in the Civil War: Nursing—Professional & Otherwise

Women from various social classes, both black and white, religious and secular, and trained and untrained, were part of a group of over 20,000 who left their homes, convents, schools, and plantations to nurse the sick and injured during the Civil War. Issues of race, class, gender, and religion both united them and also became sources of conflict, especially when they came into contact with male physicians and surgeons. Women's experiences in wartime, in hospitals, on hospital ships, and at battle scenes, reveal an overlapping of duties and complicate the very meaning of the word "nurse." Join us for this lecture that will tie directly into our current exhibition *Broken Bodies, Suffering Spirits: Injury, Death, & Healing in Civil War Philadelphia*.

Speaker: Barbra Mann Wall, PhD, RN, FAAN, Associate Professor, Evan C. Thompson Endowed Term Chair for Excellence in Teaching, Associate Director, Barbara Bates Center for the Study of the History of Nursing

Open to the Public. 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 or call 215-399-2341. at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

Thursday, May 1, 2014 at 6:30pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

**CURE YOU or KILL YOU:
19th CENTURY MEDICAL SCIENCE & QUACKERY**

In the 19th century, William Swaim peddled his panacea to those suffering from blood illnesses; Mrs. Winslow promised soothing syrup to lull infants to sleep; and Cornelius Bennet Harness's electric corsets vowed to aid the chest in healthy development. Swaim and Winslow counted morphine and arsenic among their "healing ingredients" and Harness's electric corsets were nothing more than magnetized steel and metal buttons. We may have discovered germ theory in the 1870s, but we also used nitrous oxide as entertainment in museum exhibits. To put it simply, the line between real science and fake science was pretty slim.

19th century quackery existed for a number of social, cultural and economic reasons; and in this after-

dark tour of Laurel Hill Cemetery, we will navigate its fascinating and sordid history. This quirky romp through medical history will involve a cemetery-sized game of life, testing hot toddies as a medical cure, a fascinating demo from The Franklin Institute that includes electricity and high voltage shocks, and a chance to win a great prize if you can manage to "survive" until the end. Afterwards, bask in your new knowledge of medical treatments and charlatans with cold beer and light refreshments. There is only one question to ask yourself: do you feel lucky?

The cost is \$10/person and advanced registration is requested. Tickets can be purchased by calling (215) 228-8200 or online at www.philasciencefestival.org.

The program is not recommended for those under the age of 21.

Guide: Alexis Jeffcoat

Friday, May 2, 2014 at 5:30 - 8:30 PM at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

www.wagnerfreeinstitute.org ph 215-763-6529

The Magical Mushroom: How a Little Spore Can Save the World - Can mushrooms save the world?

Famed mycologist Paul Stamets thinks so!

Tickets are limited, reservations ahead of time strongly recommended. Price: \$15 Reserve your tickets. This event is part of the Philadelphia Science Festival.

Saturday, May 03 2014 at 02:00PM - 03:30PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Pyramids, Mummies, Cleopatra, and Tutankhamun with Dr. Zahi Hawass

At the afternoon talk, Dr. Hawass shares an inside perspective on a host of recent archaeological discoveries in Egypt. Dr. Hawass has excavated around the Sphinx and the Pyramids of Giza for many years. He found the tombs of the pyramid builders that tell the story of the workmen who were involved in the massive construction projects. He also drilled under the Sphinx to learn more. At Giza, he directed a scientific research team that used a robot to search for secret doors inside the Great Pyramid of Khufu.

Dr. Hawass will sign books following the lecture. His latest book, *Discovering Tutankhamun: From Howard Carter to DNA*, is available at the Penn Museum Gift Shop.

\$20 General Admission; \$15 Penn Museum Members. Tickets include general admission to the Penn Museum

Saturday, May 3, 2014 at 7:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

A GHOSTLY CIRCUS:

FIRE ARTS PERFORMANCE in the CEMETERY

From the Anastenaria performed in villages in Northern Greece and Southern Bulgaria, to the Native American healing ceremony of the Sacred Fire, to Letuli Olo Misilagi and the Samoan Fire Knife dance; the addition of fire to performances and ceremonies has been a part of many different cultures for centuries. Fire dancing became popular in the United States in the mid-nineties and now this unique art form is coming to Laurel Hill Cemetery.

On Saturday, May 3rd, fire-arts performers will bring a ghostly circus to life. Somewhere between the clouds, the tombs, and Dante's rings, the artists will find their stage evoking and encompassing the spirit of Laurel Hill with a dance on fire and in the air. This unique, other-worldly show will include: fire dancing, aerial performers, theatrical side-show, and a Dance with the Dead After-Party where attendees are treated to a hands-on demonstration of fire-arts with glow-in-

the-dark hoops, fans, and poi. Bring your own blankets or beach chairs, picnics, and/or beverages and enjoy a picnic under the stars.

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.

Sunday, May 4, 2014 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

SOUTH OF THE BRIDGE:

EXPLORATIONS of the CEMETERY'S SOUTHERNMOST SOD

The South is known for its legacies and legends and the southernmost section of Laurel Hill Cemetery is no exception. The man who exhibited his monument while he was still living and had it reviewed by the venerable New York Times; the highest ranking Civil War officer and his tales of battle; a passenger on the ill-fated Titanic; and the soldier who was with Custer at his last stand. These are just a few of the tales we will cover on this fascinating exploration of South Laurel Hill. Bring your cameras as this excursion will provide an opportunity to see a section of Laurel Hill rarely included on regular walking tours.

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

Guide: Gerry McCormick

Tuesday, May 6, 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: "Before Long, This Process Will Be in General Use throughout Europe": A History of the AIV Method

A talk by Jarmo Pulkkinen

Invented by Finnish biochemist Artturi Ilmari Virtanen (1895-1973) in 1928, the AIV method is a fodder preservation method based on acidification of fresh fodder below pH 4. It was the first reliable method created to produce good-quality silage. In 1945 this invention earned Virtanen the Nobel Prize in Chemistry. In the early 1930s the AIV method was licensed in over 10 European countries and the United States. However, the method was never to revolutionize the cultivation of fodder and the feeding of cattle as originally envisioned by Virtanen. The diffusion of the AIV method was slowed down by various scientific, economical, technological, and even logistical reasons. In the 1930s and 1940s it was used most notably in Scandinavia and the Netherlands. Moreover, modifications of the AIV method were in use in Germany and the United States. In Finland it was used in its original form until 1968.

Jarmo Pulkkinen has published articles and books on the history of philosophy, physiology, and agriculture. His current project is to write a book-length study on the invention, adoption, and diffusion of the AIV method. He holds a Ph.D. from the University of Oulu, Finland.

Tuesday, May 6, 2014 at 7:00 PM at the Valley Forge Park Theater on Route 23 in Valley Forge.

Friends of Valley Forge Park

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

An Evening with George Washington and the Marquis de Lafayette

Don't miss this discussion between General Washington (Dean Malissa) and the Marquis de Lafayette (Ben Goldman), re-united once again at Valley Forge.

Free and Open to the Public.

Wednesday, May 07, 2014 at 06:00PM - 07:30PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Great Voyages" Lecture: Jason and the Golden Fleece

Brian Rose, James B. Pritchard Professor of Classical Archaeology, University of Pennsylvania
Searching for the Golden Fleece with Jason and the Argonauts

One of the most captivating voyages in Classical literature involved the travels of the Greek hero Jason to the Black Sea, where he searched for the golden fleece of a winged ram that was the prized possession of the kingdom of Colchis (modern Georgia). The narrative components of the voyage provide us with an unusually rich depiction of early Greek attitudes toward women, especially from exotic foreign lands, as well as geographic exploration and ancient sources of gold. Dr. Rose discusses Jason's journeys, and also examines how Greek seafaring in the late Bronze and early Iron Ages relates to Jason's maritime adventures. Sign up for a series subscription and save: \$40, general public; \$15, Penn Museum members. Individual lecture with advance registration: \$5, general public; \$2, Penn Museum members; \$10 at the door based on availability. Free for students with college ID.

Wednesday, May 7, 2014 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia PA, at 6:00 pm.

Laboratory for Research on the Structure of Matter - Science Cafe

"The Molecules of Life"

Jeff Saven - Chemistry, University of Pennsylvania

<http://www.lrsm.upenn.edu/events/sciencecafes/index.html>

Free and Open to the Public.

Thursday, May 8, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Russell Gold | The Boom: How Fracking Ignited the American Energy Revolution and Changed the World

Wall Street Journal energy reporter Russell Gold was a Pulitzer Prize finalist and Gerald Loeb Award winner for his coverage of the Deepwater Horizon oil spill and its aftermath. His articles on fracking and shale gas were some of the first to explore the issues, personalities, and technologies involved in this once-obscure energy source. In *The Boom*, "an insider's guide to the most controversial energy-production technique in the United States" (Kirkus), Gold provides a sober and meticulously researched look at fracking and its place in the American landscape and in the global economy.

FREE. No tickets required. For Info: 215-567-4341.

Saturday, May 10, 2014 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

THE PEN IS MIGHTIER THAN THE SWORD: WRITERS, EDITORS and PUBLISHERS of LAUREL HILL

Louis Godey was America's first true "media mogul." His editor, Sarah Josepha Hale, lobbied Abraham Lincoln until he finally acquiesced and made Thanksgiving a national holiday. Historian and author Henry Charles Lea knew better than the Monty Python Troupe why nobody ever expects the Spanish Inquisition. The Elversons changed the face of the city using nothing but newsprint and a Sunday edition of *The Philadelphia Inquirer*. These stories are all part of the publishing history of Philadelphia. Joins us as we

visit Laurel Hill's writers, editors, and publishers whose influence is still felt; even from the grave.

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

Guide: Patty Stringer

Monday, May 12, 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 brought to you by the American Philosophical Society.

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

<http://scienceontaphilly.com/>

Tuesday, May 13, 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: "Nanomaterials Dossier in Review: Understanding the Evolution of U.S. and E.U. Regulatory Approaches to Protecting and Providing Access to Risk Data Information"

A talk by Robert Slate

The U.S. Environmental Protection Agency (EPA) has the authority under the Toxic Substances Control Act (TSCA) to regulate the manufacture, use, testing, and disposal of engineered nanomaterials in the United States. The Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) authorizes the European Chemicals Agency (ECHA) to regulate engineered nanomaterials in the European Union. The EPA and ECHA continue to face engineered-nanomaterials management challenges, such as obtaining risk data and providing access to chemical information, that are critical to TSCA and REACH implementation. This lecture will discuss EPA and ECHA attempts to protect legitimate confidential business information claims while furthering the goals of their respective chemicals authorities. The talk will also examine the issue in the context of California's new Safer Consumer Products Regulation and possible TSCA reform. The lecture will incorporate findings from the Chemical Heritage Foundation's oral-history collection.

Wednesday, May 14, 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!

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

Open to the Public. Admission \$5.00

Email us at: nerdnitephilly@gmail.com

Wednesday, May 14, 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:

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

Friday, May 16, 2014 at 8:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

LUNAR STROLL:

PHOTOGRAPHING LAUREL HILL AFTER HOURS

Photo enthusiasts: grab your cameras, tripods and flashlights, and capture the ethereal wonders of Laurel

Hill Cemetery after the sun goes down. During this guided stroll through the site's picturesque landscape, participants will visit some of its most photogenic spots and evocative statuary, while learning to paint with light using only a flashlight and ambient iridescence. You will be over the moon with excitement once you see your unique images! You will also have experiences to share from this rare and intimate exploration of the cemetery long after its gates close for the night. Photography experience is recommended. Lunar Strolls will occur on the third Friday of every month from May through August.

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

Guide: Emma Stern

PhACT Scientific Expedition

Saturday, May 17, 2014 -

Don Nigroni, a longtime PhACT member, naturalist, and monster hunter extraordinary, will lead another monster/ghost hunting expedition.

See page 5 for more details.

Saturday, May 18, 2014 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

1864: THE FINAL THROES OF WAR

In 2011, states, cities and institutions across the U.S., and including Laurel Hill Cemetery, marked the 150th Anniversary of the start of the Civil War. Many of those men engaged in battle, fighting on the sides of both the Union and Confederacy, rest at Laurel Hill. The site also holds sacred the remains of many prominent Civil War-era Philadelphians, including volunteer nurses, surgeons, and supporters of the war effort.

Laurel Hill continues its commemorative Sesquicentennial Exhibition highlighting military figures and citizens whose contributions to the war and war effort epitomize the stories of the peoples who lived during and through this stirring era in our nation's history. This year's exhibit begins in 1864, the bloodiest year of the Civil War, and follows the stories of these notable figures through to the war's historic conclusion. The Drum Major who lost his life only a few months after being promoted to Principal Musician of his unit; the young soldier accused of a plot to assassinate Jefferson Davis; and the strong-willed woman who ran the Post Office of the Great Central Fair are just a few of the fascinating and unique stories that will be shared and commemorated.

The opening will include a historic walking tour of some of the notables included in the exhibit, the premiere of 1864: The Final Throes of War, as well as a viewing of the exhibit's artifacts. It will conclude with light refreshments. The program will be co-presented by Temple University professor, president of the General Meade Society and author of Philadelphia and the Civil War, Dr. Andy Waskie; and independent researcher, historian and cofounder of www.findagrave.com, Russ Dodge. It will take place on Saturday, May 18 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.

While admission to the exhibit opening and tour is FREE, advance registration is requested. RSVP by



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/

calling (215) 228-8200 or emailing aj@thelaurehillcemetery.org.

Monday May 19, 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 Troppman, National Park Service, will speak on Chaplains of the Revolution.

Tuesday, May 20, 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: "Won't Get Fooled Again": The Primacy of Chemistry in the Founding of America"

A talk by Brent Lane

Between 1540 and 1620 European efforts to settle North America progressed slowly from the first failed colony by the French in Canada to the eventual success of the English at Jamestown, Virginia. Over the same period the young science of chemistry—still emerging from the mysticism of alchemy—was becoming increasingly important in those settlement enterprises. Brent Lane will describe how the evolving commercial nature of those settlement efforts and a growing reliance on private investors elevated chemistry and its practitioners to a primary role in the founding of America.

Wednesday, May 21, 2014 at 6:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

OF BLESSED MEMORY:

JEWISH NOTABLES of LAUREL HILL CEMETERY

A JEWISH AMERICAN HERITAGE MONTH EVENT

When Laurel Hill Cemetery was founded in 1836, its early popularity was, in part, tied to its support of democratic ideals: admission was free; personal expression was encouraged and, most importantly, religious affiliation did not matter. Men and women of all faiths, or perhaps none at all, would choose to make Laurel Hill their final place of rest. This walking tour of the cemetery will specifically highlight the lives and careers of many of the Jewish notables who impacted the history of Philadelphia. Discover their stories and explore their nineteenth, twentieth and twenty-first century contributions to the city. The program will be followed by a light reception with wine and appetizers, and will mark Jewish American Heritage Month. By congressional resolution, May is the national month of

recognition of the 350-year history of Jewish contributions to American culture, acknowledging the achievements of American Jews in fields ranging from sports, arts and entertainment to medicine, business, science, government and military service.

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

Thursday, May 24, 2014 at 03:30PM at University

of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Afternoon Lecture: Gender, Kinship, and the Afterlife in the tomb of Mutirdis

It's a Man's World? Gender, Kingship, and the Afterlife in the Private Tomb of Mutirdis

Dr. Josh Roberson, Camden Community College, speaks about the ancient book known as "The Awakening of Osiris" and its incorporation into the tomb of Mutirdis, a private, female priestess at Thebes. Sponsored by the American Research Center in Egypt—Pennsylvania Chapter. Admission: \$10; \$7, PennCard holders; \$5, students with ID; free for ARCE-PA members. For more information, visit www.arce-pa.org.

Sunday, May 25, 2014 at Noon at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

MEMORIAL DAY PARADE, SERVICE & RECEPTION

SILENT SENTRY REDEDICATION

On May 25, 2014, the Friends of Laurel Hill Cemetery will hold a public ceremony rededicating the "Silent Sentry," an historic bronze statue of a Civil War soldier at parade rest, first dedicated in 1883 at Mount Moriah Cemetery in Southwest Philadelphia.

For nearly 100 years, the "Silent Sentry" watched over the gravesites of over ninety Union Veterans at Mount Moriah. In the 1970s, the 700-pound, 7'2" statue was removed from its base in an attempted theft. It was recovered and repaired by the Military Order of the Loyal Legion of the United States (MOLLUS), who maintained the monument for decades with the assistance of the Laran Bronze Foundry. In recent years, efforts were made to find a suitable public location for the "Silent Sentry," in keeping with its original purpose. In 2013, MOLLUS approved its relocation to Laurel Hill Cemetery, where it will resume its duty in guarding the resting places of Veterans of America's Civil War.

The Friends invite members of the public citizenry to join them in partnership with MOLLUS, the General Meade Society, supporting military organizations, and esteemed guests for the historic Rededication of the "Silent Sentry" at Laurel Hill Cemetery on Sunday, May 25, 2014 at Noon, rain or shine.

Services will commence in traditional fashion, as gathered participants form a parade to the gravesite of General George Meade, victor of Gettysburg, for a brief ceremony in annual observance of Memorial Day. The first Memorial Day commemoration in Philadelphia took place in 1868 at Laurel Hill Cemetery. The parade will then reform and proceed to

the plot of the Grand Army of the Republic Meade Post #1, new location of the "Silent Sentry," for a seated ceremony that will culminate with the unveiling of the monument. Keynote speakers include Brigadier General Wilbur E. Wolf III, Deputy Commanding General, 28th Infantry Division, Pennsylvania National Guard; Richard Wood Snowden, great great grandson of Colonel A. Loudon Snowden, who delivered the keynote address at the first dedication of the "Silent Sentry" in 1883; and Waldron Kintzing Post II, Commander-in-Chief of MOLLUS. The day will conclude with beer and light luncheon refreshments. Commemorative items, including 9.5" resin replicas of the monument created by nationally renowned sculptor, Andrew Chernak, will be available for sale.

A \$5/person donation will be requested at the door, and will include a copy of the commemorative program booklet and post-ceremony beer and refreshments. Credit cards will be accepted for payments of \$10 or more. The ceremony will run approximately two hours, and will take place outdoors. Attendees are advised to prepare appropriately for the weather. Comfortable shoes are strongly suggested.

Friday, May 28 at 10:00am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.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.

May's walking tour will take place on Friday, May 28 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: Rich Wilhelm

Tuesday, June 3, 2014 at 7:00 PM at the Valley Forge Park Chapel on Route 23 in Valley Forge Park.

Friends of Valley Forge Park

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

Parable and Playground:

The Historical Evolution of Valley Forge

What has been, and is, the meaning of Valley Forge? Join Park Ranger Marc Brier for a fascinating presentation and discussion on the evolution of Valley Forge as a park.

Free and open to the Public.

Wednesday, June 04, 2014 at 06:00 PM - 07:30PM, at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

"Great Voyages" Lecture

Darwin's Beagle Voyage

Michael Weisberg, Associate Professor, Philosophy, University of Pennsylvania

When Darwin first stepped foot on the HMS Beagle in 1831, little did he know that what he saw would change biology forever. Dr. Weisberg retraces Darwin's voyage from England to South America, New Zealand, Australia, and Africa, looking at the interesting flora

and fauna he encountered, and what they told him about the history of life on earth. Sign up for a series subscription and save: \$40, general public; \$15, Penn Museum members. Individual lecture with advance registration: \$5, general public; \$2, Penn Museum members; \$10 at the door based on availability. Free for students with college ID.

at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

June 5-8, 2014 at the Sheraton of Philadelphia 201 N 17th St, Philadelphia, PA 19103

American Humanist Association Annual Conference
Join hundreds of humanists, atheists and freethinkers in Philadelphia for a four-day celebration of humanism! The American Humanist Association will feature informative lectures, book signings, celebrity guests, networking opportunities, child care, fun activities and more!

Cost: \$25 Students \$299 Full Registration

More info at:

<http://conference.americanhumanist.org/>

Friday, June 6, 2014 at 6:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

YOGA IN THE CEMETERY

Find inner tranquility and balance during this one-hour yoga session amongst the peaceful backdrop of Laurel Hill Cemetery at dusk. The session will be led by experienced yoga instructor, Emily Golomb. Emily draws from Lyengar and Ashtanga styles and has created her own unique program that enhances alignment, strength and balance. Students are encouraged to form a deeper connection with their minds and bodies, whether they are new to yoga or have been practicing for years. Emily has been practicing yoga for nine years and currently teaches at Studio 1831 and Philly Dance Fitness. Sunset Yoga in the Cemetery will conclude with wine and light refreshments. Please bring your own mat. All levels of experience are welcome. Yoga in the Cemetery sessions will occur once a month, June through September.

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

Guide: Emily Golomb

Saturday, June 7 at 8:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

THE BAILEY HOUNDS:

GOthic AMERICANA CONCERT

Philadelphia-based band, The Bailey Hounds, released their first full-length album, *Along the Gallows*, in 2011 to much critical acclaim. Since then, their unique sound – mixing acoustic and electric, folk and rock – have earned them a loyal and deserved following. They gained significant international attention after their live acoustic cover of Pantera's "The Great Southern Trendkill" was shared by Pantera on Facebook. XPN's *The Key* describes their latest album, *All the Blood in the World*, as "steeped in the rumbling amps and pensive pace of Crazy Horse." The music of The Bailey Hounds has been described as Gothic Americana, influenced by folk and blues, but inspired by the macabre and melancholy, rendering a cemetery the most fitting of venues. Join us for this summer concert under the stars at Laurel Hill. Bring your own blankets or beach chairs, picnics, and/or beverages.

The concert will take place on Saturday, June 7 at 8:00pm, (with a prescheduled rain date of Saturday, June 14 at 8:00pm.) 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. Advance reservations are requested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Sunday, June 8 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

THE GREAT CENTRAL FAIR OF 1864

Imagine pulling up to Logan Square and stepping into a gothic building encompassing some 200,000 square feet. Wonders surround you; 1,000 different works of art, a parlor displaying items from famous Pennsylvanians like William Penn and George Fox. The Horticulture Department displays a giant palmetto tree, the likes of which you have never seen, outfitted with hidden tubes shooting jets of water into its base. In the Department of Arms and Trophies, you see the Scottish Claymore of Allan MacGaskill who was rumored to be 7 feet 6 inches tall and 290 pounds. You and 29,000 others wander the halls for hours, stopping to snack on noodle soup and flannel cakes at various vendors throughout the building. This is not the Philadelphia Home Show. Welcome to the 1864 Great Central Fair.

In the fourth year of the Civil War, leading local citizens loyal to the Union organized the Great Central Fair to raise funds in support of the United States Sanitary Commission, the private agency that promoted better hygiene in Union camps and improved care for the sick and wounded throughout the Civil War. Many of the committees provided a place for women of the era to find their voices and make an impact on the war effort. These women, along with a number of other fair organizers were eventually laid to rest at Laurel Hill Cemetery.

To mark the 150th anniversary of the Philadelphia sanitary fair, living historians Kerry Bryan and Michael Wunsch, presenting as Mrs. Elizabeth E. Hutter and Mr. John Welsh respectively, will offer an introductory PowerPoint presentation followed by a tour to visit the graves and tell the stories of some of these notable citizens. Attendees will be invited to a reception offering light refreshments after the tour.

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

Guide: Kerry Bryan and Michael Wunsch

Monday, June 9, 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 brought to you by the Wagner Free Institute of Science.

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

<http://scienceontapphilly.com/>

Wednesday, June 11, 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/

Wednesday, June 11, 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

Friday, June 13 at 9:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

CINEMA IN THE CEMETERY

Sit back and relax with a drink, some popcorn and some friends on this summer 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 year's feature film will be a fitting selection for Friday the 13th. Bring your own blankets or beach chairs, picnics, and/or beverages.

The cost is \$10/person general admission. Advance reservations are requested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Wednesday, June 18, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Kevin Birmingham | The Most Dangerous Book: The Battle for James Joyce's Ulysses (A)

For more than a decade, James Joyce's *Ulysses*—a book often considered the greatest novel of the 20th century—was illegal to own, sell, advertise, or purchase in most of the English-speaking world. Even before its publication in 1922, the book outraged government censors on both sides of the Atlantic, with its obscenities, masturbation, and adulterous sex. But a band of literary radicals and free speech activists helped initiate the landmark 1933 obscenity case that set a precedent for First Amendment rights and cultural freedom. In *The Most Dangerous Book*, Birmingham tells the remarkable story surrounding *Ulysses*, from the first stirrings of Joyce's inspiration to a world forced to contend with a masterpiece.

FREE. No tickets required. For Info: 215-567-4341.

Friday, June 20, 2014 at 8:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

LUNAR STROLL:

PHOTOGRAPHING LAUREL HILL AFTER HOURS

Photo enthusiasts: grab your cameras, tripods and flashlights, and capture the ethereal wonders of Laurel Hill Cemetery after the sun goes down. During this guided stroll through the site's picturesque landscape, participants will visit some of its most photogenic spots and evocative statuary, while learning to paint with light using only a flashlight and ambient iridescence. You will be over the moon with excitement once you see your unique images! You will also have experiences to share from this rare and intimate exploration of the cemetery long after its gates close for the night. Photography experience is recommended. Lunar Strolls will occur on the third Friday of every month from May through August.

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

Guide: Emma Stern

Saturday, June 21, 2014 at 6:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia,

PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>**THE SOULSTICE****A YOUNG FRIENDS FUNDRAISING EVENT**

June 21st officially marks the first day of summer and Laurel Hill Cemetery's Young Friends group, The Antemortem Society, is putting the soul in solstice with a midsummer night's celebration and fundraiser. To mark the 150th birthday of the Cemetery's main bridge, The Antemortem Society is hosting a unique preservation party that will raise funds to restore the historic site.

The Soulstice will take place on June 21st at 6:00pm in the southernmost section of Laurel Hill Cemetery at 3822 Ridge Avenue, Philadelphia, PA 19132. Cascades of fun activities await attendees as they enjoy the other-worldly aura of the Cemetery after dark. The night includes an exclusive preview performance by REV Theatre Company, the chance to observe the night sky with The Rittenhouse Astronomical Society, tarot card readings with Cynthia Wilson, a silent auction and great music for dancing the night away.

All funds raised from the event support the preservation of Laurel Hill Cemetery, a National Historic Landmark. Since its founding in 1836, Laurel Hill Cemetery has been a place for the living as well as for the dead. Its 78 acres provide green space for the East Falls community and a place of respite and recreation for the citizens of Philadelphia.

Tickets for the event are \$50 general admission/\$35 for members and include wine, beer and cocktails at our open bar, fare from Philly's best food trucks, a "Make Your Own S'mores" dessert station and photos at our cemetery-style step and repeat banner. Advance reservations are required. Tickets can be purchased by phone (215) 228-8200 or online.

PhACT Picnic**Saturday, June 21, 2014**

10:00 to 2:00 at Mondauk Common Park
(our usual location). See page 5 for
more details.

Friday, June 27, 2014 at 10:00am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.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.

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: Jerry McCormick

Sunday, June 29 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>**TO SET THEM FREE:****ABOLITION OF SLAVERY AT LAUREL HILL**

Philadelphia played a central and indelible part in the struggle to end the evil that was slavery, even as the city itself was sharply and fiercely divided on the issue. Many Philadelphians who made it their purpose to crusade against the institutionalized bondage of African-Americans did so against great opposition and often, great personal danger. Yet, they fought unflinchingly, eventually leading to the Emancipation Proclamation issued on January 1, 1863. On this tour, hear the tales of their struggles and courage as we remember those who fought the good fight against that terrible scourge.

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

Guide: Russ Dodge

Monday June 30, 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/>

Bruce Gill, Executive Director and Curator of the Harriton Association will speak on Charles Thomson (the Secretary to the Continental Congress) The Man America Forgot

Tuesday, July 1, 2014 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents>**Paul Greenberg | American Catch: The Fight for Our Local Seafood**

Paul Greenberg is the author of the James Beard Award-winning New York Times bestseller *Four Fish: The Future of the Last Wild Food*, a fellow with The Blue Ocean Institute, and the writer in residence at New York City's South Street Seaport Museum. In *American Catch*, he looks to New York oysters, gulf shrimp, and Alaskan salmon to reveal why 91 percent of the seafood eaten in the United States is imported from foreign waters, and proposes a way to break this destructive pattern of consumption.

FREE. No tickets required. For Info: 215-567-4341.

Saturday, July 12, 2014 at 6:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>**TAPHOPHILE TRIVIA:****QUIZZO in the CEMETERY**

Venture out of the bars and into the cemetery as you team up with Laurel Hill Cemetery's Young Friends group, The Antemortem Society, for a game of trivia amongst the tombstones. Your knowledge will be tested on all things stones and bones and Philadelphia history—this is not your average game of quizzo! Enjoy pub snacks and beer as you compete in regular quizzo categories with an otherworldly twist. Winning gets you bragging rights and a great prize for your team.

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

Sunday, July 13, 2014 at 11:00am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>**YOGA IN THE CEMETERY**

Find inner tranquility and balance during this one-hour yoga session amongst the peaceful backdrop of Laurel Hill Cemetery at dusk. The session will be led by experienced yoga instructor, Emily Golomb. Emily

draws from Lyengar and Ashtanga styles and has created her own unique program that enhances alignment, strength and balance. Students are encouraged to form a deeper connection with their minds and bodies, whether they are new to yoga or have been practicing for years. Emily has been practicing yoga for nine years and currently teaches at Studio 1831 and Philly Dance Fitness. Sunset Yoga in the Cemetery will conclude with wine and light refreshments. Please bring your own mat. All levels of experience are welcome. Yoga in the Cemetery sessions will occur once a month, June through September.

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

Guide: Emily Golomb

Monday, July 14, 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 brought to you by the Academy of Natural Sciences of Philadelphia.

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

<http://scienceontaphilly.com/>

Friday, July 18, 2014 at 8:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>**LUNAR STROLL:****PHOTOGRAPHING LAUREL HILL AFTER HOURS**

Photo enthusiasts: grab your cameras, tripods and flashlights, and capture the ethereal wonders of Laurel Hill Cemetery after the sun goes down. During this guided stroll through the site's picturesque landscape, participants will visit some of its most photogenic spots and evocative statuary, while learning to paint with light using only a flashlight and ambient iridescence. You will be over the moon with excitement once you see your unique images! You will also have experiences to share from this rare and intimate exploration of the cemetery long after its gates close for the night. Photography experience is recommended. Lunar Strolls will occur on the third Friday of every month from May through August.

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

Guide: Emma Stern

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In science, 'fact' can only mean 'confirmed' to such a degree that it would be perverse to withhold provisional assent.' I suppose that apples might start to rise tomorrow, but the possibility does not merit equal time in physics classrooms.

~ Stephen Jay Gould

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

Bob Glickman, President	Wes Powers, Webmaster
David Cragin, Ph.D., Vice-President	David Cattell Ph.D.
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The PhACT website is: 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.

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Phactum Editor, Ray Haupt
phactpublicity@aol.com

“Whenever a separation is made between liberty and justice, neither, in my opinion, is safe.”

~ Edmund Burke (1729 - 1797)