

“Always danger where men are evil, but knowledge best weapon for protection. “

~ Charlie Chan (Charlie Chan's Courage, 1934)

Phactum

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The Lost Templar Treasure and Fleet

By Don Nigroni



According to legend, some Knights Templar were able to remove their treasure from the Paris Temple before the mass arrest of Templars in France on Friday the 13th in October 1307. Said treasure may have included the Ark of the Covenant or the Holy Grail or secret documents which were obtained by the Templars whilst in Jerusalem during the Crusades. The story goes that they fled in 18 galley ships from the port of La Rochelle and the treasure is now buried under Rosslyn Chapel in Scotland or deep down in the Oak Island Money Pit.

In Chapter 37 of the blockbuster Dan Brown novel *The Da Vinci Code* (2003) we read:

The Templars' potent treasure trove of documents, which had apparently been their source of power, was Clement's true objective, but it slipped through his fingers. The documents had long since been entrusted to the Templars' shadowy architects, the Priory of Sion, whose veil of secrecy had kept them safely out of range of the Vatican's onslaught. As the Vatican closed in, the Priory smuggled their documents from a Paris preceptory by night onto Templar ships in La Rochelle.

In the novel, the mission of the Priory of Sion was to protect the remains of Mary Magdalene, the Sangreal documents, which prove Mary and Jesus married and had a child, and their still extant bloodline.

And Brown also wrote:

"Here is perhaps the best-known tome," Teabing said, pulling a tattered hardcover from the stack and handing it to her. The cover read:

HOLY BLOOD, HOLY GRAIL
The Acclaimed International Bestseller

In the influential alternative historical work *Holy Blood, Holy Grail* (1982) by Michael Baigent, Richard Leigh and Henry Lincoln, we are told:

In the second place, there is persuasive evidence of some sort of organized flight by a particular group of knights -- virtually all of whom were in some way connected with the order's treasurer. It is not perhaps surprising, therefore, that the treasure of the Temple, together with almost all its documents and records, should have disappeared. Persistent but unsubstantiated rumors speak of the treasure being smuggled by night from the Paris preceptory shortly before the arrests. According to these rumors it was transported by wagons to the coast -- presumably to the order's naval base at La Rochelle -- and loaded into eighteen galleys, which were never heard of again. Whether this is true or not, it would seem that the Templars' fleet escaped the king's clutches because there is no report of any of the order's ships being taken. On the contrary, those ships appear to have vanished totally, along with whatever they might have been carrying.



Phactum Table Of Contents

<u>The Lost Templar Treasure and Fleet</u>	p. 1
<u>Upcoming PhACT Events</u>	p. 4
<u>Letters to the Editor</u>	p. 9
<u>Various Ruminations</u>	p.10
<u>October/November 2016 Meeting Reports</u>	p.15
<u>At the Wagner Free Institute</u>	p.17
<u>A Single Rose - Poetry</u>	p.18
By Albert Fried-Cassorla	
<u>Off the Beaten Path</u>	p.19
Snow Day	
by Kim A. Sheridan	
<u>The Recent Election, the Bradley Effect</u>	p.21
And Randomized-Response Polling	
By Howard J. Wilk	
<u>Study: Rational Thinking is Teachable</u>	p.22
By Paul Schlueter	
<u>PhACT Calendar</u>	p.24

Phactum's Roster of I.R.E. (Infamous Rational Errors)

Phactum contributor Paul Schlueter III has accumulated over time a vocabulary listing of many of the egregious flaws of thinking, devious tactics of argument, and some pretty cool Latin phrases that might sound impressive used at a social gathering. This listing is nowhere near complete, but has been made into a pamphlet that is available free and only at PhACT Meetings.

Meeting attendees are invited to take one and are invited to participate in expanding the listing in the next edition as it is intended to be a collaborative project. Definitions and examples should be short and to the point and may be submitted to the *Phactum* editor at: phactpublicity@aol.com

New entry: REPETITION BIAS - The subconscious tendency to believe things heard often. Traditional and Folk wisdom often fall into this category. That which is most familiar, and most readily called to mind, often tends to be believed without critical thought or question. Even when myths, legends, or distorted ideas are repeated for the purpose of refuting them, that repetition reinforces their strength.

In *Holy Blood, Holy Grail* there is a reference in a footnote to the testimony of Jean de Chalons and to Finke. Heinrich Finke's *Papsttum und untergang des Templerordens* (1907) has the report of the testimony of Jean de Chalons at the 1308 papal investigation of the Templars at Poitiers, France. Here we find that fateful single sentence that launched a host of tales about the Lost Templar Fleet and the Lost Templar Treasure:

Item dixit, quod potentes ordinis prescientes istam confusionem fugiunt et ipse obviavit fratri Girardo de Villariis ducenti quinquaginta equos, et audivit dici, quod intravit mare cum XVIII galeis, et frater Hugo de Cabilone fugiit cum toto thesauro fratris Hugonis de Peraudo.

He also said that powerful men in the Order learned beforehand of such trouble and fled and he himself met brother Gerard de Villers leading 50 horses, and heard said, that he entered the sea with 18 galleys, and brother Hugues de Chalons fled with all of the treasure of brother Hugues de Peraud. (my translation)

So, according to this report, what did Jean say and, also, what did he not say? First, he claimed that some Templars had advance warning of the upcoming stealth arrests. Second, he saw some mounted Templars before the arrests. Third, he heard that those knights sailed away in 18 galley ships. And, fourth, he heard that a brother was able to flee with the Lost Templar Treasure before the arrests. Hugues de Peraud was the Visitor of the Order, who was stationed at the Paris Temple, and was the second most powerful Templar, after the Grand Master, Jacques de Molay. The famous Lost Templar Treasure was the treasure that the Knights Templar held in the Paris Temple which was supposedly saved by those warrior monks prior to their arrests in 1307 and subsequently its whereabouts were purportedly a mystery. Hence, Jean's "treasure of brother Hugues de Peraud" and "the treasure being smuggled by night from the Paris preceptory shortly before the arrests" of Baigent et al. and Brown's "documents from a Paris preceptory" all refer to the Lost Templar Treasure. And what did Jean not say? He did not contend that he heard that the fleet sailed from La Rochelle, in fact, he did not mention any specific port. And he also did not explicitly say that he heard that the treasure left on any of those 18 ships.

So what can we make of this testimony? Was it false because it was a simple lie or as an honest mistake? He may have lied under duress and indicated that the treasure had been taken away by the Templars, not just removed by the King's men and put into the King's coffers, in order to avoid being tortured before being sentenced or to mitigate any punishment afterwards. Or he may indeed have seen Gerard de Villers, the Master of France, leading some mounted knights shortly before the arrests. And after the shocking arrests of the warrior monks, who had sacrificed so much for the Catholic faith, wild rumors might have spread and become more and more exaggerated until Jean did actually hear about the 18 galley ships, though evidently not about La Rochelle, and the treasure of the Paris Temple having been saved by the Templars before the mass arrest.

On the other hand, could the report have been true? Many relevant documents have been lost over the centuries and some of them might have corroborated Jean's testimony. But where would the fleet and treasure have gone? Perhaps to Portugal where the Templars were allowed to change their name and keep their property as a reward for their contribution to the *Reconquista*. However, since convincing evidence of the fate of the fleet and treasure is lacking, the fleet with its treasure might simply have been lost at sea.

The unsolved mysteries of the Lost Templar Fleet and the Lost Templar Treasure have resulted in much speculation, some of it simply ludicrous, but the issue is likely to remain unsettled, unless, and this seems highly improbable, crucial artifacts or documents can someday be found which shed more light on what really happened.



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Don Nigroni received a BS in economics in 1971 from Saint Joseph's University and a MA in philosophy from Notre Dame in 1973. He retired in 2007 after working for 32 years as an economist with the US Bureau of Labor Statistics. He now spends his time cutting invasive plants as a volunteer Weed Warrior, hiking, kayaking, bird watching and metal detecting for buried treasure.



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 garage on 17th Street which is one way south bound. It opens at 1:00 PM and closes at 6:00 PM. 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. **Please try to arrive a few minutes early as the College now requires that meeting attendees sign in for security reasons. ID must be shown.**

Saturday, January 21, 2017 at 2:00 PM - In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets. Mathematician John A. Paulos will discuss his recent book *A Numerate Life - A Mathematician Explores the Vagaries of Life, His Own and Probably Yours*.

John Allen Paulos is an extensively kudzied author, popular public speaker, and former monthly columnist for ABCNews.com, the Scientific American, and the Guardian. Professor of math at Temple University in Philadelphia, he earned his Ph.D. in the subject from the University of Wisconsin.

His recent book (November, 2015) is *A Numerate Life - A Mathematician Explores the Vagaries of Life, His Own and Probably Yours*. Other writings of his include *Innumeracy* (NY Times bestseller for 18 weeks), *A Mathematician Reads the Newspaper* (on the Random House Modern Library's compilation of the 100 best nonfiction books of the century), *Once Upon a Number* (chosen as one of the best books of 1998), and *A Mathematician Plays the Stock Market* (a brief tenant on the BusinessWeek bestsellers list). He's also written scholarly papers on probability, logic, and the philosophy of science as well as scores of OpEds, book reviews, and articles in publications such as the NY Times, the Wall Street Journal, Forbes, the Nation, Discover, the American Scholar, and the London Review of Books and has an extensive web and media presence.

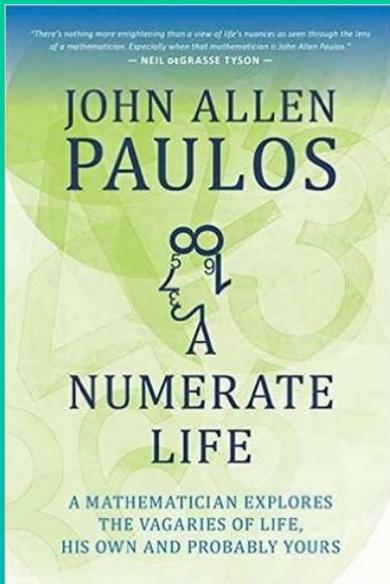
In 2003 he received the American Association for the Advancement of Science award for promoting public understanding of science, and in 2013 the Mathematics Communication Award from the Joint Policy Board for Mathematics.

Blurbs on the book:

"There's nothing more enlightening than a view of life's nuances as seen through the lens of a mathematician. Especially when that mathematician is John Allen Paulos, a brilliant educator who persistently empowers the reader to think in ways that render transparent much of what is opaque in the world around us."— Neil deGrasse Tyson — Astrophysicist, American Museum of Natural History

[\(Bonus: A Twitter math "war" between Neil deGrasse Tyson & John Allen Paul\)](#)

"*A Numerate Life* is the engaging history of a mathematical mind. As always, Paulos displays his genius for making the abstract and abstruse entirely intuitive."— Sylvia Nasar — Author of *A Beautiful Mind*



A Numerate Life: A Mathematician Explores the Vagaries of Life, His Own and Probably Yours by John Allen Paulos

Paperback: 200 pages Publisher: Prometheus Books (November 10, 2015)
ISBN-10: 1633881180 ISBN-13: 978-1633881181

Employing intuitive ideas from mathematics, this quirky "meta-memoir" raises questions about our lives that most of us don't think to ask, but arguably should: What part of memory is reliable fact, what part creative embellishment? Which favorite presuppositions are unfounded, which statistically biased? By conjoining two opposing mindsets--the suspension of disbelief required in storytelling and the skepticism inherent in the scientific method--bestselling mathematician John Allen Paulos has created an unusual hybrid, a composite of personal memories and mathematical approaches to re-evaluating them.

Entertaining vignettes from Paulos's biography abound--ranging from a bullying math teacher and a fabulous collection of baseball cards to romantic crushes, a grandmother's petty larceny, and his quite unintended role in getting George Bush elected president in 2000. These vignettes serve as springboards to many telling perspectives: simple arithmetic puts life-long habits in a dubious new light; higher dimensional geometry helps us see that we're all rather peculiar; nonlinear dynamics explains the narcissism of small differences cascading into very different siblings; logarithms and exponentials yield insight on why we tend to become bored and jaded as we age; and there are tricks and jokes, probability and coincidences, and much more.

* * * * *

Other Books by Dr. John Allen Paulos

All books available at bookstores and online through Amazon, Barnes & Noble, or Booksense.

Irreligion: A Mathematician Explains Why the Arguments for God Just Don't Add Up

Hardcover: 176 pages Publisher: Hill and Wang
(December 26, 2007 ISBN-10: 0809059193

Innumeracy: Mathematical Illiteracy and Its Consequences

Paperback: 208 pages Publisher: Hill and Wang Pub.
Date (1988) ISBN-13: 9780809058402

A Mathematician Plays The Stock Market

Publisher: Perseus Publishing Pub. Date: May 2004 ISBN-13: 9780465054817 Paperback: 216 pages

Beyond Numeracy: Ruminations of a Numbers Man

Publisher: Knopf Publishing Group
Pub. Date: April 1992 ISBN-13: 9780679738077
Paperback: 285 pages

A Mathematician Reads the Newspaper

Publisher: Knopf Publishing Group Pub. Date: March 1996 ISBN-13: 9780385482547 Paperback 212pages

Once Upon A Number: The Hidden Mathematical Logic Of Stories

Paperback: 224 pages Publisher: Basic Books
Pub. Date: October 1999 ISBN-10: 0465051596

I Think Therefore I Laugh.

Publisher: Columbia University Press; Pub. Date 1985
ISBN-13: 978-0231119153 Paperback: 192 pages

Mathematics and Humor

Publisher: University of Chicago Press
Pub. Date: November 1982 Paperback: 116 pages
ISBN-13: 9780226650258

"A quirky and surprisingly poignant book about the struggle to make sense of one's own life story. With the help of logic and statistical reasoning, Paulos shines a light on the paradoxes and delusions that so often bedevil our remembrance of things past."— Steven Strogatz — Professor of mathematics, Cornell University, and author of *The Joy of x*

"A wonderful book. Paulos's life is a rich tapestry embroidered with mathematical gems."— Mario Livio — Astrophysicist and author of *Brilliant Blunders*

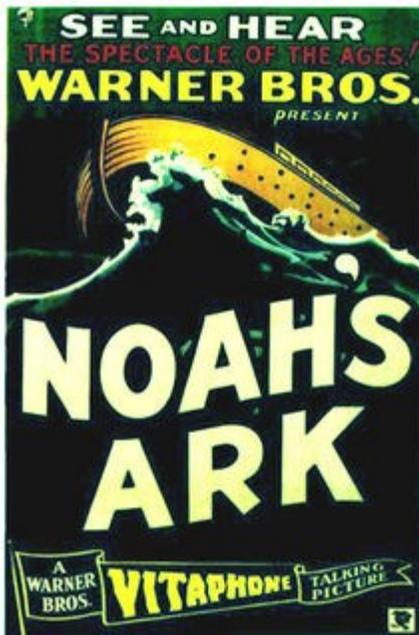
"Paulos surprises us once again. . . . A thought-provoking, path-breaking 'meta-memoir'"— Doron Zeilberger — Professor of mathematics, Rutgers University, and winner of the Leroy P. Steele Prize and the Euler Medal

Saturday, February 18, 2017 at 2:00 PM - In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets. Professor Jon Nyquist, an Environmental Geologist at Temple University will discuss:

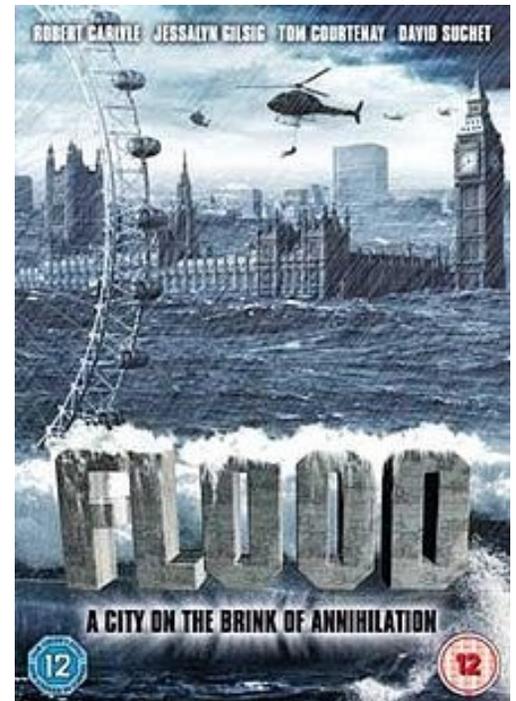
Disasters: Geology vs. Hollywood

"Professor Nyquist holds the Week's chair in Environmental Geology at Temple University where his is chairman of the Department of Earth and Environmental Science. He uses movies as the cornerstone of his general education course, "Disasters: Geology vs. Hollywood," to teach science to non-science students. For developing the course, Nyquist was honored with an inaugural Provost's Award for Innovative Teaching in General Education. Nyquist began his career at the Oak Ridge National Laboratory in the Health Sciences Division in 1986. His research emphasized the use of aerial geophysical techniques to characterize land areas, help make land-use decisions, and support environmental restoration programs. Nyquist was active in developing techniques to use remotely piloted airplanes to carry new types of geophysical sensors. He has been president of the Environmental and Engineering Geophysical Society.

Dr. Nyquist obtained his bachelor's and master's degrees in physics from Macalester College, St. Paul, MN, and the University of Maryland, respectively, and his doctorate in geophysics at the University of Wisconsin. He holds a PhD in Geophysics from the University of Wisconsin. Nyquist is past president of the Environmental and Engineering Geophysical Society, and a recipient of the Harold Mooney Award from the Society of Exploration. He is a member of the International Association of Mathematical Geologists, the Geological Society of America and several geophysical societies.



1928 Warner Brothers film poster



2007 Lionsgate DVD cover

the Harold Mooney Award from the Society of Exploration. He is a member of the International Association of Mathematical Geologists, the Geological Society of America and several geophysical societies.

Saturday, March 18, 2017 at 2:00 PM - In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets. Program TBA. See the PhACT Calendar at www.phact.org

Saturday, April 15, 2017 at 2:00 PM - In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Dr. Paul Offit will discuss his new book,

PANDORA'S LAB: SEVEN STORIES OF SCIENCE GONE WRONG.

Specifically, Dr. Offit will focus on two of the seven scientific inventions he argues changed the world--for the worse. Of interest, Dr. Offit got several of his initial ideas for this book in discussions with PhACT members following a meeting about two years ago.

Dr. Paul Offit is an internationally known vaccinologist based locally at Children's Hospital of Philadelphia.



Saturday, May 20, 2017.

PhACT Expedition. Stay tuned for details.

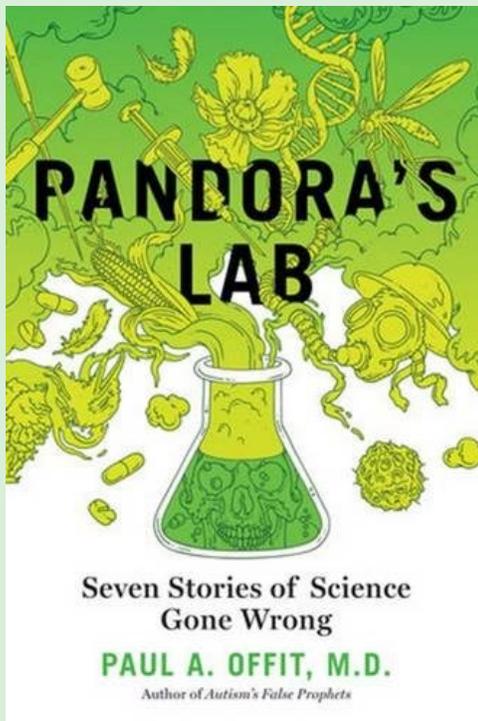
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Pandora's Lab: Seven Stories of Science Gone Wrong by Paul A. Offit, M.D.

Hardcover: 288 pages

Publisher: National Geographic (April 4, 2017)

ISBN-10: 1426217986 ISBN-13: 978-1426217982



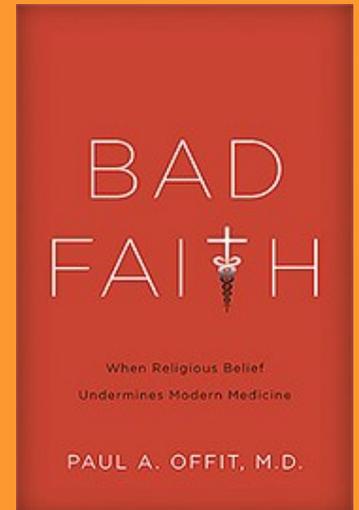
What happens when ideas presented as science lead us in the wrong direction? History is filled with brilliant ideas that gave rise to disaster, and this book explores the most fascinating—and significant—missteps: from opium's heyday as the pain reliever of choice to recognition of opioids as a major cause of death in the U.S.; from the rise of trans fats as the golden ingredient for tastier, cheaper food to the heart disease epidemic that followed; and from the cries to ban DDT for the sake of the environment to an epidemic-level rise in world malaria. These are today's sins of science—as deplorable as mistaken ideas from the past such as advocating racial purity or using lobotomies as a cure for mental illness. These unwitting errors add up to seven lessons both cautionary and profound, narrated by renowned author and speaker Paul A. Offit.

Offit uses these lessons to investigate how we can separate good science from bad, using some of today's most controversial creations—e-cigarettes, GMOs, drug treatments for ADHD—as case studies. For every "Aha!" moment that should have been an "Oh no," this book is an engrossing account of how science has been misused disastrously—and how we can learn to use its power for good.

Bad Faith: When Religious Belief Undermines Modern Medicine

by Paul Offit, M.D.

Hardcover: 272 pages Publisher: Basic Books (March 10, 2015)
ISBN-10: 0465082963 ISBN-13: 978-0465082964



In recent years, there have been major outbreaks of whooping cough among children in California, mumps in New York, and measles in Ohio's Amish country—despite the fact that these are all vaccine-preventable diseases. Although America is the most medically advanced place in the world, many people disregard modern medicine in favor of using their faith to fight life threatening illnesses. Christian Scientists pray for healing instead of going to the doctor, Jehovah's Witnesses refuse blood transfusions, and ultra-Orthodox Jewish mohels spread herpes by using a primitive ritual to clean the wound. Tragically, children suffer and die every year from treatable diseases, and in most states it is legal for parents to deny their children care for religious reasons. In twenty-first century America, how could this be happening?

In *Bad Faith*, acclaimed physician and author Dr. Paul Offit gives readers a never-before-seen look into the minds of those who choose to medically martyr themselves, or their children, in the name of religion. Offit chronicles the stories of these faithful and their children, whose devastating experiences highlight the tangled relationship between religion and medicine in America. Religious or not, this issue reaches everyone—whether you are seeking treatment at a Catholic hospital or trying to keep your kids safe from diseases spread by their unvaccinated peers.

Replete with vivid storytelling and complex, compelling characters, *Bad Faith* makes a strenuous case that denying medicine to children in the name of religion isn't just unwise and immoral, but a rejection of the very best aspects of what belief itself has to offer.

Other Books by Paul Offit

Offit, Paul (2015). *Bad Faith: When Religious Belief Undermines Modern Medicine*. Basic Books. ISBN 0465082963.

Paul A. Offit (2013). *Do You Believe in Magic? The Sense and Nonsense of Alternative Medicine*. Harper. ISBN 0062222961.
 UK title: *Killing Us Softly: The Sense and Nonsense of Alternative Medicine*

E. Allison Hagood; Stacy Mintzer Herlihy; Paul A. Offit (foreword) (2012). *Your Baby's Best Shot: Why Vaccines Are Safe and Save Lives*. Lanham, Md: Rowman & Littlefield Publishers. ISBN 1-4422-1578-X. CS1 maint: Multiple names: authors list (link)

Offit, Paul A. (2011). *Deadly Choices: How the Anti-Vaccine Movement Threatens Us All*. Basic Books. ISBN 978-0-465-02149-9.

Offit, Paul A. (2008). *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure*. Columbia University Press. ISBN 978-0-231-14636-4.

Offit, Paul A. (2007). *Vaccinated: One Man's Quest to Defeat the*

World's Deadliest Diseases. Smithsonian Books/Collins. ISBN 978-0-06-122795-0.

E-book version: Offit, Paul A. (2009). *Vaccinated: Triumph, Controversy, and An Uncertain F.* HarperCollins. ISBN 9780061871511.

Offit, Paul A. (2005). *The Cutter Incident: How America's First Polio Vaccine Led to the Growing Vaccine Crisis*. Yale University Press. ISBN 978-0-300-10864-4.

Marshall, Gary S; Penelope H. Dennehy; David P. Greenberg; Paul A. Offit; Tina Q. Tan (2003). *The Vaccine Handbook: A Practical Guide for Clinicians*. Lippincott Williams & Wilkins. ISBN 978-0-7817-3569-8.

Offit, Paul A.; Louis M. Bell (1999). *Vaccines: What Every Parent Should Know*. Macmillan. ISBN 978-0-02-863861-4.

Offit, Paul A.; Louis M. Bell (2003). *Vaccines: What You Should Know* ((third edition) ed.). Wiley. ISBN 978-0-471-42004-0.

Offit, Paul A; Bonnie Fass-Offit; Louis M. Bell (1999). *Breaking the Antibiotic Habit: A Parent's Guide to Coughs, Colds, Ear Infections, and Sore Throats*. John Wiley. ISBN 978-0-471-31982-5.

Letters to the Editor

Letters and Rants to the Editor are encouraged.
Send to PhACTPublicity@aol.com

Editor: "5000 years ago" seems to have become some sort of meme. In *Phactum* July/August/September 2016 page 27 Paul Schluetter III describes the Torah (the first five books of the Bible) as having been written over 5000 years ago, when in fact it was written over a period of time in the first millennium BCE, i.e. about 2000 to 3000 years ago. A few years ago my local paper, the *Northeast Times*, had an article about Hanukkah, a holiday commemorating events "over 5000 years ago", when it is known that the Maccabean Revolt was 167 BCE to 160 BCE--as of 2016, 2175 to 2182 years ago. (BCE years are not quite like negative numbers, because there was no year 0.)

For years, up until a few years ago, I played basketball once a week during the summer with the same guys I had been playing with since high school. Once I remarked to one of them how we had a tradition for 5000 years of playing basketball then going to the 7-11 for refreshments. A few years after that I said to him how we had been playing ball then going to the 7-11 for 5004 years, etc.--you get the picture.

Howard J. Wilk
Philadelphia

Editor: A remarkable coincidence. In the video "Dorothy [*sic*] lands in Munchkin land," at 19 seconds Glinda first appears, descending like a soap bubble. Glinda fully emerges from the bubble at 44 seconds, 25 seconds later.

In the video of the Falcon 9 descent and landing, the craft appears at 0 seconds, right at the start (it's an interactive vid-

eo; you have to "look up" on the image), and descends and lands with final engine shutoff 25 seconds later. The Glinda bubble and the Falcon 9 even take about the same course across the screen.

Play the videos side-by-side. Start the Oz video first and, at the first appearance of the Glinda bubble at 19 seconds, start the Falcon 9 video.

Glinda video:

https://www.youtube.com/watch?v=TP_wx0qrKu0

Falcon 9 video:

<https://www.youtube.com/watch?v=KDK5TF2BOhQ>

Howard J. Wilk
Philadelphia,

Editor: This letter is in response to Howard J. Wilk's *manifesto* in the July/August/September 2016 *Phactum*. Wilk cites politicians among the people whose opinions on climate change we should pay no attention to, and singles out some remarks of Senator James Inhofe of Oklahoma. Our own former senator Rick Santorum has also had something to say on the subject. He's been quoted as saying "This is what bothers me about this debate – the idea that the science is settled...Any time you hear a scientist say the science is settled, that's political science, not real science, because no scientists in their right mind would say ever [*sic*] the science is settled."

What Senator Santorum allegedly said is not entirely stupid. Any subject about which there is settled certainty is indeed not science. If a theory can't be falsified it's not scientific. But what Sen. Santorum doesn't understand is that "the science is settled" is like a *short answer* to a question about scientific consensus on the subject. The longer answer can be

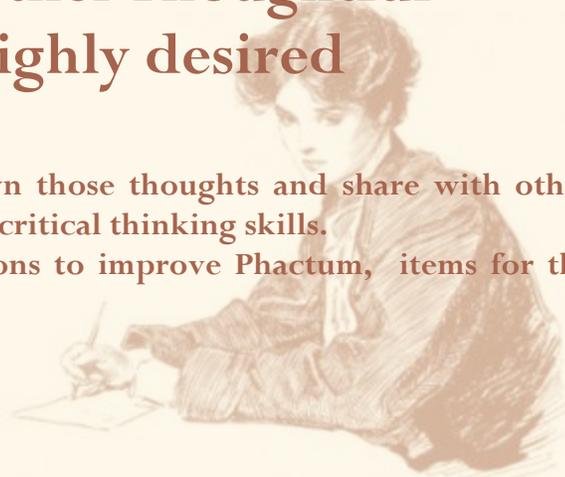
Letters to the Editor and Other Thoughtful Correspondences are highly desired

If you have thoughts on some matter why not write down those thoughts and share with other Phactum readers? Writing is a great way to hone and refine critical thinking skills.

Articles, poetry, Letters and Rants to the Editor, suggestions to improve Phactum, items for the calendar, and other matters of interest are wanted.

Almost all topics are welcome - no partisan politics please.

Send submissions to the editor at phactpublicity@aol.com



found in scientific journals and books; the theoretically longest, final answer doesn't exist – it can't exist.

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)

Woman Trapped in Home by WIFI

Get a load of this!!!

It seems that a woman in Glastonbury, UK has become housebound in deteriorating health because of WIFI and cell phone radiation. Claiming to have an allergy to electromagnetic radiation she asserts that her condition worsened when her town installed 3G cellular service.

<http://metro.co.uk/2016/12/21/woman-cant-leave-her-house-because-of-an-allergy-to-wifi-and-mobile-phones-6336490/>

Ebola Vaccine - 1

Ebola is a ferocious viral disease with an extremely high mortality rate. It is highly contagious and when contracted is very difficult to cure. Fortunately for the world, and especially for some regions of Africa, Homeopathy seems to have some answers.

This link to a homeopathy website offers some details about what homeopathy can do.

<http://www.homeopathyworldcommunity.com/forum/topics/ebola>

From the website:

“Homoeopathic Medicines in Ebola Outbreak

CROTALUS HORRIDUS is a homeopathic cure for Ebola Virus at 30C dilution according to reliable sources.

As a preventative if an outbreak happens nearby, *Crotalus horridus* 30C, one dose daily, until the threat is out of the area is the method.

If a person is infected, the remedies most commonly used would be the following. One dose every hour, but as the severity of the symptoms decrease, frequency is reduced. If no improvement is seen after 6 doses, a new remedy ought to be considered.

Crotalus horridus 30C – Is to be considered for when there is difficulty swallowing due to spasms and constriction of the throat, dark purplish blood, edema with purplish, mottled skin.

Bothrops 30C – Is the remedy to think of when nervous trembling, difficulty articulating speech, sluggishness, swollen puffy face, black vomiting are present

Lachesis mutus 30C – when there's delirium with trembling and confusion, haemorrhage in any area, consider this remedy. Often, the person cannot bear tight or constricting clothing or bandages and feels better from heat and worse on the left side.

Sicarius (six-eyed crab spider): a homeopathic treatment for Ebola haemorrhagic fever and disseminated intravascular coagulation? In geographical locations prone to be affected by ebola virus, a prophylactic administration of potentised *Sicarius* spider will be beneficial”.

The paragraph about *Crotalus horridus* where a 30C dilution is considered to be a “preventative” is of interest. A preventative may not exactly correlate to “vaccine” but there are similar aspects to the use of the word that may very well mislead desperate laymen seeking safety from that terrible disease.

"Skepticism is a big tent, and there's room for everyone when people focus on the work rather than sowing discord over real or imagined ideological differences unrelated to skepticism."

~ Benjamin Radford, research fellow with CSI, deputy editor of *Skeptical Inquirer*, author. (See *SI*, vol. 40, iss. 6, p. 44)



Crotalus horridus is commonly known as the timber rattlesnake. This creature has highly toxic venom. Fortunately it is a usually mild mannered creature preferring flight over fight. *C. horridus* is native to most of the eastern United States including

most of Pennsylvania. It so happens that southeastern Pennsylvania, including Philadelphia, is not within its natural habitat. Kind of nice to know that factoid.

Also of some interest is *Bothrops*. *Bothrops*, also known as the yellow pit viper, is an aggressive venomous nocturnal animal indigenous to northern South America and Central America. The venom of *bothrops*, potentized to a 30C concoction is used as part of the treatment of ebola.

And then, of course there is *Lachesis mutus* more commonly known as the bushmaster snake, a feared venomous serpent of South and Central America. This venom is also potentized to a 30C dilution and is part of the homeopathic treatment plan for ebola.



Finally, the substance *sicarius* is the potentized venom of the six-eyed sand spider of southern Africa. How odd that it too is dispense at a dilution of 30C.

It seems then that homeopathic remedies and preventatives for ebola center around snake and spider venoms diluted out of existence and useless.

Ebola Vaccine - 2

Ebola news has quieted considerably since 2014 but it has not been forgotten by scientists working on development of a vaccine. The *New York Times* reported on December 22, 2016 that several pharmaceutical companies, Sanofi, GSK, and Merck have developed vaccines. The Merck vaccine is the most promising and is considered to be 100% effective. The company has been contracted to produce

300,000 doses even though the substance has not yet been approved by the World Health Organization, or European and American drug regulators. The story can be read here: http://www.nytimes.com/2016/12/22/health/ebola-vaccine.html?_r=0

What a great difference between the two approaches to prevention of a deadly disease. Homeopathy has once again proved itself foolish to all but the most obsessed of anti-science alternative medicine enthusiasts. Science has again triumphed by way of hard work, perseverance, and methodical application of old and new knowledge with no need to put snakes and spiders and magical thinking on display.

The score: Homeopathy 0, Science 1.

Gambling Addiction - 1

“How Casinos Enable Gambling Addicts” is an article in the December 2016 edition of *The Atlantic*. It is an interesting and rather grim story by John Rosengren about the cynical and cold blooded misuse of advertising, statistics, probability, and psychology to create gambling addicts.

The article begins and ends with the tale of Scott Stevens, a 52 year old Ohio business executive and family man who had been exposed to casino gambling in Las Vegas in 2006 while on a business trip. On a subsequent trip he won a jackpot playing a slot machine. From then on Stevens was hooked and would make frequent trips to Las Vegas with his family. He gambled heavily and lost heavily.

So Stevens took to embezzlement as a means to pay off



Mountaineer Casino at Chester, WV

his debts and continue his gambling addiction. He became a regular gambler at Mountaineer Casino in West Virginia, a racetrack which added casino gambling in 2007. Losses mounted and Stevens embezzlement reached a stag-



It is never possible for a metaphysician to state his ideas in plain English. Those ideas, with few exceptions, are inherently nonsensical, and he is forced to formulate them in a vague and unintelligible jargon. Of late some of the stars of the faculty have taken to putting them into mathematical formulae. They thus become completely incomprehensible to the layman, and gain the additional merit of being incomprehensible also to most other metaphysicians.

~ H. L. Mencken (1880-1956)

gering four million dollars. All the while, Stevens' wife and friends had no idea his addiction was so severe.

In despair and facing prosecution in 2012, Stevens wrote a letter to his wife and proceeded to commit suicide.

The author discussed casino tactics to hook gamblers into addiction by playing on the weaknesses of people who may show signs of addictive behavior. He gives other examples of people with the addiction and massive financial losses.

Rosengren explains that gambling is a drug-free addiction yet there are neurological and physiological reactions to the stimulus of the gambling tables and slot machines. Some gamblers show signs of panic attacks, anxiety, insomnia and other disorders when they can not gamble.

Problem gamblers are the gravy train for casinos and they closely track the gambling habits of Compulsive Gamblers and are not shy about offering loyalty cards and other incentives to get the addicted to sit in front of the slot machines. Some casinos have ATM machines that allow gamblers to withdraw funds from their accounts without having to leave the machine they are playing.

One technique employed by casino managers to reinforce the addicts habit is to mislead the gambler into thinking he had a "near miss" at the slot machine. A "near miss" is when a slot machine has been played and a losing round displays a jackpot symbol near the payline. It is a loss but the impression of nearly winning is imparted. Some slot machines, according to Rosengren display the jackpot symbol far more often than they would if operated by chance. The "near miss" stimulates the gambler to try again.

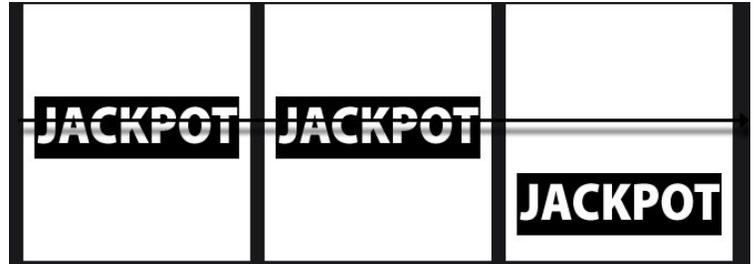
Yet another deceptive reinforcement with modern slot machines is that the gambler can place multiple bets with multiple ways to win on a single play. This greatly increases the number of "wins" but unfortunately despite the flashing lights of the machine the winning payoff is usually less than the amount wagered. The "win" is far too often a masquerade and in reality is a loss.

John Rosengren presents a compelling indictment



against the casino gambling industry but it is unlikely that his research and efforts will have practical impact for many years if ever. This article may be read at:

<http://www.theatlantic.com/magazine/archive/2016/12/losing-it-all/505814/>



Gambling Addiction - 2

The article discussed above tells a sad story, but sadder yet is the fact that the shrill tunes of gambling addiction woes such as befell Scott Stevens is not rare. Listed below are some similar stories from around the world, during the month December 2016, of gambling addiction having profound negative effects upon peoples lives.

♠♣♥♦ **UK** - Trusted money man who siphoned off £117,000 from employers is jailed. Trusted money man Craig Gillis almost brought a family business to its knees after siphoning off more £117,000 in a five year con on his employers. Gillis was the accounts manager for Arrows Corporation, an online business based in Heaton selling items including industrial and outdoor equipment, pet cages and motorcycle gear, which was run by husband and wife Andrew and Helen Martin. But he started plundering huge sums after his gambling habit got the better of him. He diverted money from sales to himself using his Paypal account rather than the company's and blew all his ill-gotten gains. The fraud left Mr and Mrs Martin having to sell their home and they were unable to take a wage and had to lay off another employee as the business struggled to cope with the losses.

<http://www.chroniclive.co.uk/news/north-east-news/trusted-money-man-who-siphoned-12350730>

♠♣♥♦ **USA** - Ex-Mason County animal shelter president gets 1-year prison term for theft A Michigan woman who admitted she bilked a Mason County animal shelter out of at least \$42,000 from 2006 to 2010 will serve more than 10 months behind bars after a federal judge accepted a plea agreement in the case Monday. The Judge ordered Oldham to serve three years of supervision after her release from prison and undergo an assessment for a gambling addiction. Mills said some of the Pets Without Parents money went for gambling, but the judge didn't suggest gambling was the motivation for Oldham's criminal activity.

<http://www.sj-r.com/news/20161219/ex-mason-county-animal-shelter-president-gets-1-year-prison->

term-for-theft

♠♣♥♦ **Asia** - Hong Kong police sergeant jailed for fleeing to Macau with HK\$1.07 million in bail money to clear own debts. A sergeant who stole HK\$1.07 million from a police safe and then fled to Macau to try to win his way out of debt, was jailed for two years on Monday. Prosecutor Vincent Lee told District Court that Cheung Wai-lun, 43, responsible for looking after bail money at the Wan Chai Police Station, had made off with the cash on May 2. After arriving in Macau, Cheung contacted his colleague and informed him where to find the key to the safe. The colleague only discovered the money had been taken after opening the safe. Cheung, meanwhile, headed for the casino floor, hoping to use the stolen money to win enough to repay a HK\$1.01 million debt, which he had accumulated with several financial institutions, the court heard.

<http://www.scmp.com/news/hong-kong/law-crime/article/2055812/hong-kong-police-sergeant-jailed-fleeing-macau-hk107>

♠♣♥♦ **Ireland** - Gambling addict 'can't help himself'. A judge has described a defendant as having the worst gambling addiction he had ever come across. The remarks were made by Judge Kevin Kilrane at Sligo District Court last Thursday where Gary Quinn of Cairns Drive who pleaded guilty to a number of theft offences. Asked if he would be getting any help for his addiction, the defendant replied that he was on a waiting list for help. He was working while in prison so his mind was occupied in every way. Being in prison was a lot easier as there was no gambling at all.

<http://www.independent.ie/regionals/sligochampion/news/gambling-addict-cant-help-himself-35288246.html>

♠♣♥♦ **UK** - Jailed - Care worker stole £35,000 from vulnerable people to feed gambling addiction. A CARE team leader who rifled the savings of vulnerable people across East Lancashire to feed his gambling addiction has been jailed for 14 months. Instead of looking after their day-to-day financial needs, Carl Storer defrauded eight victims out of more than £35,000 before he was caught out, Burnley Crown Court was told. Richard Taylor, defending, said his client, who was now attending Gamblers Anonymous, had demonstrated full remorse and empathy with his victims from the moment the frauds were uncovered.

http://www.lancashiretelegraph.co.uk/news/14959836.JAILED_Care_worker_stole_35_000_from_vulnerable_people_to_feed_gambling_addiction/

♠♣♥♦ **Canada** - Supervisor stole more than \$900K from her credit union to feed gambling habit. She stole more than \$900,000 from her credit union employer then lost it all feeding a crippling gambling addiction. But a personal history marked by tragedy, an anxiety disorder and possible bi-polar disorder was not enough to keep Rosalie Gurske out of prison, a judge ruled Tuesday. Gurske has had "a sad life... but that is not a reason to steal," Judge Murray Thompson said before sentencing Gurske to 42 months in prison. "She is still responsible for her actions."

<http://www.winnipegsun.com/2016/11/29/supervisor-stole-more-than-900k-from-her-credit-union-to-feed-gambling-habit>

THE SUNKEN COST FALLACY

A concept familiar to both psychic scamsters and casinos: that the more money, time, and/or emotional investment a "mark" has invested into a particular con, the more likely that the "mark" will continue adding to their investment, because "so much is already invested, I'd be a fool to quit now." Also a factor: as the sunken cost grows, the harder it becomes to admit that you've been scammed. "Staying the course" is not, in and of itself, a rational justification for further investment in any failed venture; continued investment must rationally rely upon (a) a feasible, plausible means to achieve success in the future, and (b) responsible means for financing further investment. Lacking either of these (or both), the best advice is to simply "cut your losses and move on."



Extraterrestrials Are Out There!

Whackiness in West Virginia?

The Sun reports that scientists at Green Bank Telescope in West Virginia and the Arecibo Observatory in Puerto Rico have detected Fast Radio Bursts (FRBs) emitting from some region outside of our galaxy, the Milky Way.

<https://www.thesun.co.uk/news/2487229/aliens-fast-radio-burst-extraterrestrials/>

According to the article scientists speculate that the signals can either be from solar flares or extra-terrestrial aliens. The notion of the extraterrestrial alien origin seems to be the dominant idea and even includes scientist Stephen Hawking who said humanity must seek out intelligent life before it finds us – or we could be wiped out. Hawking, 74, says a technologically advanced alien race could send our vulnerable race the way of the dodo if we're not careful. Yeah. Sure.



Alien waiting to invade Earth

It so happens that the article also states that the region of the Universe emitting the RFBs is about 3 Billion Light Years distant. At such a remote location emitted light or radio waves would have begun their journey a couple of billion years before life on Earth existed at all. Perhaps those aliens had highly developed

future vision of Life on Earth and Evolution of intelligent beings.

The question in my mind is: are these people serious and who finances such research? It seems that Green Bank Observatory had significant funding from the National Science Foundation but that funding source has been drastically cut if not eliminated. Good. Science research funding does not grow on trees and the resources are scarce. Let funding propel useful research, such as immunity to placebo clinical trials, instead of fantasy of this nature.

See this item for information about funding of this waste-

ful project: <https://www.wired.com/2016/10/happens-space-observatory-goes-rogue/>

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MCHUMOR.com by T. McCracken



"This doesn't look good. I'm afraid you've developed an immunity to placebos."

Cartoon by T. McCracken
<http://www.mchumor.com/>
Used by Permission

"Moral certainty is always a sign of cultural inferiority. The more uncivilized the man, the surer he is that he knows precisely what is right and what is wrong. All human progress, even in morals, has been the work of men who have doubted the current moral values, not of men who have whooped them up and tried to enforce them. The truly civilized man is always skeptical and tolerant, in this field as in all others. His culture is based on "I am not too sure." ~ H.L. Mencken

"In science it often happens that scientists say, "You know that's a really good argument; my position is mistaken", and then they would actually change their minds and you never hear that old view from them again. They really do it. It doesn't happen as often as it should, because scientists are human and change is sometimes painful. But it happens every day. I cannot recall the last time something like that happened in politics or religion" ~ Carl Sagan

Meeting Reports - October/November 2016

Reported by Brandon Foltz, a Physics student of Dr. David Cattell at Community College of Philadelphia.

Richard Saunders discussed: Thinking Critically about Money and Investing October 15, 2016

Reported by Brandon Foltz

Richard Saunders, of the AARP consumer issues task force, spoke at the PhACT meeting about a number of scenarios requiring critical thinking when it comes to personal finances and consumer activity. Richard began by stating the fact that anyone, anywhere, of any age, can be the victim of fraud or human error and so the material he would share was universal advice. As an example, he handed out a copy of a bank statement showing evidence of a bank's incompetence - a check he had written had been debited twice! This added weight to his suggestion that people should always scrutinize all documents relating to dealings with their money, as mistakes like this happen often.

Richard went on to describe a number of known scams. One such scam involved calls from the supposed IRS, stating that the recipient owed tax money and would be imprisoned if they didn't pay promptly. Another scam involved parties calling to offer lower rates on the recipients' credit cards. Richard prompted us to consider why the bank would possibly want to offer lower interest rates on credit cards. Many of the attendees were already familiar with such scams, though a few were less common. Affinity fraud was mentioned as one of the more insidious categories of fraud, whereby a criminal takes advantage of those who trust him or her. This type of fraud is common within religious institutions, and he described the details of one such scam involving Grace Christian Ministries, where a pastor defrauded the congregation of some \$350,000.

MCHUMOR.com by T. McCracken



"At least we won't have to worry if our pension plans are any good."

Cartoon by T. McCracken
<http://www.mchumor.com/>
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The presentation continued with descriptions of common legitimate situations that are rife with pitfalls. One such situation arises in choosing a financial advisor. Richard asked us to consider: how are they being paid? What do the acronyms attached to their title really mean? Do these factors suggest an advisor with the consumer's interests in mind, or their own? The same criteria for consideration can be applied to stock brokers. Richard suggested a visit to www.finra.org for more information about these topics. Another scenario described was a so-called "free lunch seminar", where attendees get a free meal while listening to a presentation about a particular investment tool. The tool is an "Equity indexed annuity", which is a legitimate investment tool, but is very confusing and easy to set up poorly so that it becomes of practically no benefit. A final word of advice was to make sure one's spouse knows how to access important financial records, bank accounts, online accounts, etc. in the case of an emergency or one's unexpected demise, so that the spouse is not left helpless in dealing with such things.

The takeaway from this talk was to always think critically when it comes to your money. Never trust anything unsolicited; if you didn't ask for it, you probably don't want it! It's easy to be scammed, and even easier to make or be on the receiving end of trivial mistakes that will *cost you money*.

**Vaccinologist Dr. Paul Offit and film maker Don Mitchell
presented the video biography:
HILLEMAN - A Perilous Quest to Save the World's Children
Saturday, November 19, 2016**

Reported by Brandon Foltz

At the PhACT meeting on Saturday, November 19th, Dr. Paul Offit of the Children's Hospital of Philadelphia presented a documentary entitled *Hilleman - A Perilous Quest to Save the World's Children*. The documentary traced the life of Dr. Maurice Hilleman, a renowned scientist who is credited with inventing more than forty vaccines. Nine of those are considered as some of the most important vaccines of this and the past century. These vaccines save the lives and spare the suffering of millions of children and adults each year.

Dr. Hilleman was born in 1919, and in that time period it was very dangerous to be a child due to many common illnesses that could lead to severe disability or death. For some perspective, the flu epidemic of 1918/1919 killed more people than died on the battlefields of WWI in the same time period. Dr. Hilleman studied at the University of Chicago and came to be a vaccinologist. Hilleman was the first to realize the method of mutation of the influenza virus, which allowed him to create viable flu vaccines year over year and spare millions from the flu epidemic of 1957.

His first job in industry was at ER Squibbs company, and he was assigned with creating a vaccine for Japanese Encephalitis in thirty days. He was successful, earning him even greater recognition in the field. He went on to work at Merck, where he was known for his unwavering concern for safety. In fact, the first vaccine for Hepatitis-B which he created using human blood as a starting point was tested on himself. This vaccine was also the first vaccine effectively against cancer in humans, since Hepatitis-B causes liver cancer. This concern for safety also led him to collaborate with Dr. Salk to improve the safety of the polio vaccine after discovering that it was unintentionally contaminated with a simian virus.

During his time at Merck, Hilleman created nine of the fourteen vaccines that are routinely given to children, among other vaccines. These include vaccines for Measles, Mumps, Rubella, Hepatitis A and B, Chickenpox, Meningitis, Pneumonia, and Influenza. He was forced to resign from Merck at age 65, and went on to live until age 85. After the presentation of the film, Dr. Paul Offit answered questions from the audience.

**Vaccinated: One Man's Quest to Defeat the
World's Deadliest Diseases
by Paul A. Offit, M.D.**

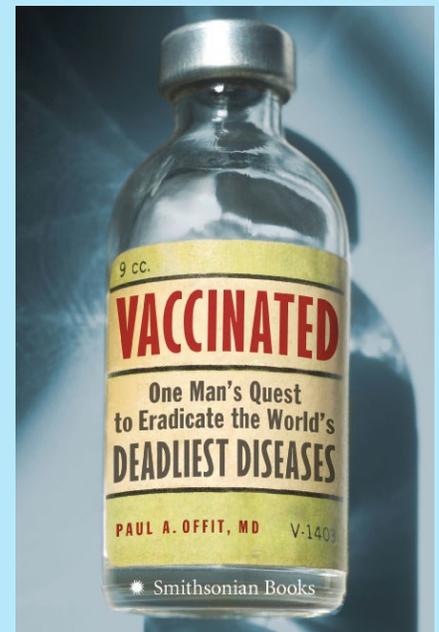
Paperback: 272 pages

Publisher: Harper Perennial; Reprint edition (August 5, 2008)

ISBN-10: 006122796X ISBN-13: 978-0061227967

His goal—to prevent every disease that commonly attacked children—was unattainable. But Maurice Hilleman came close.

Maurice Hilleman is the father of modern vaccines. Chief among his accomplishments are nine vaccines that practically every child gets, rendering formerly deadly diseases—including mumps, rubella, and measles—nearly forgotten. Author Paul A. Offit's rich and lively narrative details Hilleman's research and experiences as the basis for a larger exploration of the development of vaccines, covering two hundred years of medical history and traveling across the globe in the process. The history of vaccines necessarily brings with it a cautionary message, as they have come under assault from those insisting they do more harm than good. Paul Offit clearly and compellingly rebuts these arguments, and, by demonstrating how much the work of Hilleman and others has gained for humanity, shows us how much we have to lose.





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 and Other Events at the Wagner

Thursday, February 16, 2017 at 6:00 PM

Sex on the Reef: An Illustrated Presentation by Alison Sweeney, University of Pennsylvania

If soft moonlight reflecting on warm ocean water sounds romantic to you, you're not alone—this scene is also ideal for coral reproduction. Once a year, entire reefs release reproductive matter into the ocean in a matter of hours. While scientists believe this synchronized spawning is driven by lunar cycles and water temperature, many aspects of coral love lives remain a mystery. Dr. Alison Sweeney straddles the worlds of physics and biology in her quest to understand light-related biological phenomena. She will share her insights into the sex lives of coral at a special Valentine's-themed Weeknights at the Wagner.

Free and Open to the Public

Thursday, March 16, 2017 at 6:00 PM Victorian Botanical Collections

An Illustrated Lecture by ELAINE AYERS Princeton University

Free and Open to the Public

Adult Education Winter / Spring 2017 Course Schedule

Plants under Glass: The history, management and practical applications of greenhouses, Professor Karen Snetelaar.

6 Tuesdays, January 17 - February 21, 2017, 6:30 - 7:30 PM. Pennsylvania Horticultural Society, 100 N. 20th St. (20th and Arch Sts.). Learn all about greenhouses – types, uses and their history. Different kinds of greenhouses will be considered, including conservatories used for botanical plant collections and greenhouses for the production of food. Practical solutions for home gardeners, such as cold frames and other season-extenders, will also be discussed.

This course requires preregistration.

Preregistration opens on Tuesday, November 29, 2016.

Register online here or call 215-763-6529 x23.

A Physics Smorgasbord: Topics in Contemporary Physics, Professor Paul J. Angiolillo.

6 Mondays, January 23 - March 6, 2017, 6:30 - 7:45 PM. Falls of Schuylkill Neighborhood Branch of the Free Library of Philadelphia, 3501 Midvale Avenue (at Warden Drive). Learn about the latest advances in physics, including evidence of the Higgs boson, new extrasolar planets and the discovery of exotic states of

matter.

No preregistration necessary. Register by attending the first class.

Viruses from the Inside Out, Professor Joseph B. Rucker.

6 Wednesdays, January 25 - March 1, 2017, 6:15 - 7:30 PM. Independence Branch of the Free Library, 18 S. 7th Street (between Market and Chestnut). This course will be a biochemist's view of how viruses work.

No preregistration necessary. Register by attending the first class.

Evolution: Process and Pattern, Professor Jason Downs.

8 Saturdays, January 28 - March 18, 2017, 10:30 AM to Noon. University of Pennsylvania Museum of Archaeology and Anthropology, located at 33rd and Spruce Streets, Philadelphia.

This course will provide a deeper understanding of the concept of evolution and how evolutionary processes have shaped the history of life.

This course requires preregistration.

Preregistration opens on Tuesday, November 29, 2016.

Register online here or call 215-763-6529 x23.

Trees of Philadelphia, Professor David Hewitt.

6 Tuesdays, March 28 - May 2, 2017, 6:30 - 7:30 PM. Pennsylvania Horticultural Society, 100 N. 20th St. (20th and Arch Sts.).

This course will provide an overview of our urban forest, with a focus on the trees of Philadelphia. There will be in-depth discussion of tree species including identification, physiology, growth and ecology. This course requires preregistration.

Preregistration opens on Tuesday, November 29, 2016.

Register online here or call 215-763-6529 x23.

The Science Behind Global Warming, Professor Kevin Cannon.

6 Wednesdays, March 29 - May 3, 2017, 6:15 - 7:30 PM. Independence Branch of the Free Library, 18 S. 7th Street (between Market and Chestnut). This course explores the science that is associated with global warming, and examines the evidence pointing to ongoing global warming and the modeling techniques used to predict the warming trend.

No preregistration necessary. Register by attending the first class.

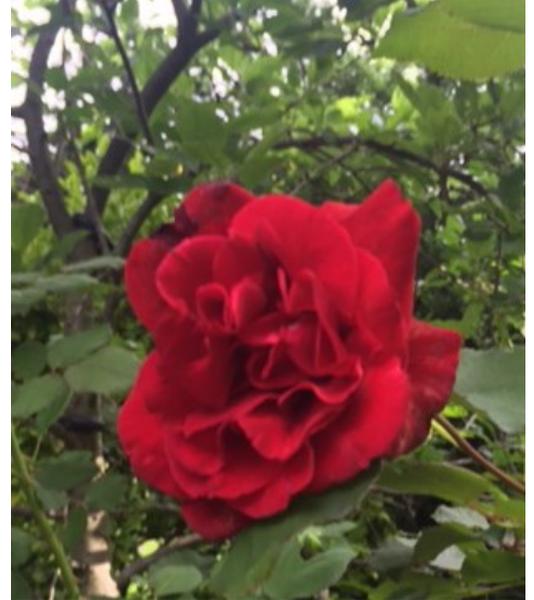
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Wagner lectures and courses are FREE and open to the general public. Contributions are gratefully received.

A Single Rose

by Albert Fried-Cassorla

All I have is a single rose,
when others have fifty-three.
Theirs hang in ample red cascades
but my one is good enough for me.
Perfection may -- or may not -- exist in eternity,
but it lives here in this moment,
in this singularity.
Some say "perfect" is a terrible notion,
an illusory potion - designed to distract us from what really
matters.



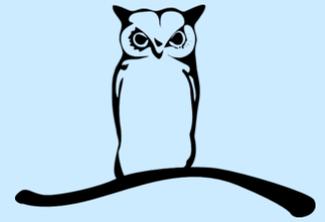
They tear at its immediate glory and leave beauty lying there -- in tatters.
But I say *heed this!* This moment of turquoise blue sky,
and fragrant, dry, cool air - don't miss the catbird singing on this day so impossibly fair!

My single rose - what can it do for you today?
Just sniff it before you go on your way.
It will give you a moment, snatched from the welter of time --
might spin you around, turn your life on a dime!
So seize the day - I insist you do!
It's time to *carpe that diem*, before the *diem carpes* you!

Albert Fried-Cassorla is Adjunct Professor of English at Gwynedd Mercy University, a playwright, poet and the founder of the Melrose Park Philosophy Club. See him read this poem on [youtube.com](https://www.youtube.com/watch?v=...) by there for Poem A Single Rose June 26, 2016. He may be reached at albfcc@verizon.net

Off the Beaten Path

By Kim A. Sheridan



Snow Day

The winter woods are a drab monotony of brown and gray. Trees stretch their skeletal arms to the dreary sky as a



Wissahickon Creek looks lovely dressed in winter white

cold wind whistles along the creek. Dusk falls early in the Wissahickon Valley. Snow is on the way.

The old cliché says that the Inuit have fifty different words for snow. In these parts, we have come up with some words of our own, none fit for polite company. We've lost our childhood delight in the wonder of snow. We are impatient with its inconveniences and wish only for it to go away. Still the snow falls softly and steadily throughout the night, brushing every branch and bud in a frosting of white. We awake in the morning to a world transformed, where even the most familiar landscapes take on a new look. Now we have different thoughts. Look at how beautiful it is! How quiet and serene.

Weariness cast aside, we long to be out among the snowflakes, forging new trails across the virgin whiteness. Where better than Forbidden Drive in the Wissahickon Valley section of Fairmount Park? This wooded gorge in the heart of Philadelphia bustles with activity in the warmer months. Not so now. Dusted with snow, the park becomes truly off the

beaten path.

Near Valley Green Inn, layers of Wissahickon schist drip in icicles. Small clumps of Christmas fern poke green through the snow. The creek below burbles happily under its coating of ice. The trail beckons, a wide ribbon of white unmarked by human footfalls.

Look closely, and you can see the snowflakes where they have fallen on the icy surface of the creek. Snow crystals all start as simple hexagonal prisms. But as more water vapor condenses onto them, they grow. As they grow, they begin to form branches. This creates an amazingly large variety of snowflake shapes, including columns, needles, plates, and dendrites. The classic six-armed shapes with side branches, like we cut from paper in school, are stellar dendrites. Stellar dendrites with an abundance of side branches are called fern-like stellar dendrites, for their resemblance to ferns.

Is snow really white? Actually, individual snow crystals look clear. When they get together with their friends, the in-



Snow crystals on ice.



© 2017
Kim A. Sheridan

Water streaming over the Livezey Dam creates whimsical ice sculptures.

coming light is reflected by the faceted crystals and bounces around before scattering back out. Since snow generally scatters all wavelengths equally, it usually looks white.

But it also happens that some red wavelengths are absorbed by the snow, giving it a blue or aqua tint. The deeper you look into a hole in a snow bank, the bluer it will appear. Heavy, wet snow absorbs a lot of red light, and looks more blue than dry powder.

Farther along Forbidden Drive, the Livezey House stands guard over an old dam across the creek. Water streaming over the dam freezes into fantastical sculptures. Downstream, rocks in the creek sport small knitted caps of snow. Through the winter-bare branches the remains of the original grist mill are revealed.

A walk along snowy Wissahickon Creek is a stroll through a magical world far from the city's clang and clamor. The drab and dreary valley has been renewed by a gentle snowfall, transformed into a bright and sparkling wonderland.

In the hush of the winter woods, one can almost hear the jingle of sleigh bells and the delighted cries of skaters on the ice. Fanciful aromas of wood smoke and hot chocolate tickle the imagination.

Where better to spend a snow day, to reawaken the childhood joys of winter, than along the Wissahickon Creek?

IF YOU GO:

The Friends of the Wissahickon has a lot of useful information on its website, and sells a detailed map of the Wissahickon Valley.

Friends of the Wissahickon:

<https://www.fow.org/>

<https://shop.fow.org/shop/fow-map/>

Valley Green Inn

Valley Green Rd

Philadelphia, PA 19128

<http://www.valleygreeninn.com/>

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



© 2017
Kim A. Sheridan

Valley Green Inn

The Recent Election, the Bradley Effect, and Randomized-Response Polling

By Howard J. Wilk

How did the pre-election polls get it so wrong? Maybe something like the Bradley Effect had something to do with it. The Bradley Effect https://en.wikipedia.org/wiki/Bradley_effect is named after Tom Bradley, an African-American politician, who lost an election despite being ahead in the polls, the theory being that people didn't want to admit to not intending to vote for Bradley for fear of being thought it was because of his race. For that or any number of reasons you can't always get the truth out of people when you ask them whom are they going to vote for, a variable that may have been particularly applicable in the recent election. Not to name names.

There's a technique for deriving accurate conclusions from polls or surveys that include sensitive questions. The method is called "randomized response" https://en.wikipedia.org/wiki/Randomized_response. This is my own version, which I think is the best. I haven't seen it anywhere, so I don't know if it's original to me. Unlike some of the other versions, *both* answers, like the answer to "are you going to vote for despicable A or disreputable B?", can be the result of randomness, where some other versions have just one sensitive answer that's protected, like the answer to "have you

ever committed a felony.?"*

In addition, my version can be done over the phone or face-to-face, the only equipment the interviewer needs is one die and the interviewee doesn't need anything, and the instructions are easier to follow than some of the alternative methods. Here it is:

"Before you tell me if you support despicable A or disreputable B, think of a number 1 through 6 but don't tell it to me. I'm going to throw a die and (tell you/you'll see) the result. Don't tell me if it's the number you chose or not, but if it is the number you chose, tell me the truth about whom you support, A or B, and if it isn't the number you chose, tell me the other name."

Fraction that is true A supporters = $1.25 - 1.5(\text{fraction of answers that are "A"})$

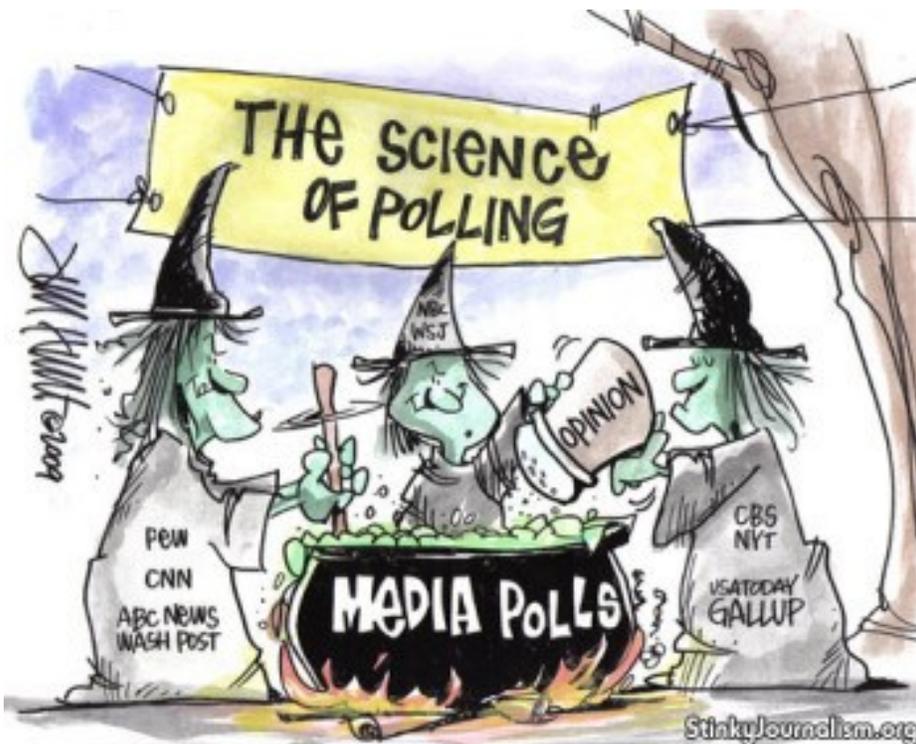
Fraction that is true B supporters = $1.25 - 1.5(\text{fraction of answers that are "B"})$

It doesn't matter that the numbers chosen by the interviewees aren't random so long as it's a fair die. I leave it to the reader to verify that this works. Which is another way of saying, it's too much of a hassle for me to put the mathematical explanation into concise form.

*I used to think that the question "are you now using anabolic steroids?" was a question with only one incriminating answer, "yes", but then I remembered the old dictum, "if you ain't cheatin' you ain't tryin' hard enough", which provides an incentive for non-users to lie to their coaches.

Howard Wilk is a Philadelphia based chemist, a long time skeptic, and an amateur pundit.

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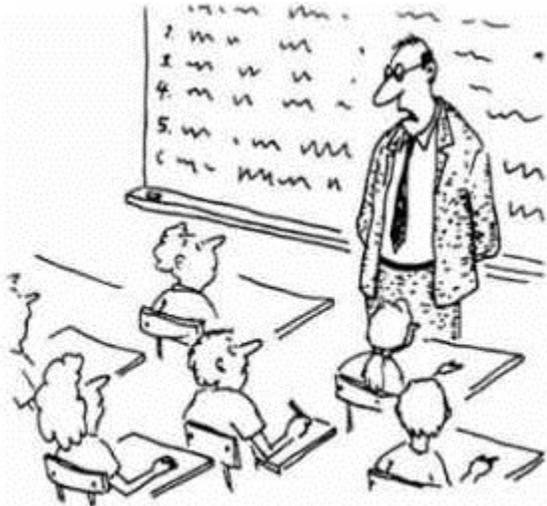


Study: Rational Thinking Is Teachable

by Paul Schlueter III

Break out the pizza and fireworks, because it's time to celebrate! Our efforts to spread the appreciation and use of rational thinking are not in vain.

The New York Times ran an article on Sept. 18, 2016, by David Z. Hambrick and Alexander P. Burgoyne, titled "How Intelligence and Rationality Differ." It turns out that the former is comparable to cognitive horsepower (and we're each stuck with roughly whatever level we have), while the latter is definable as the propensity for reflective thought (and any of us can improve our rational ability with certain training).



"I expect you all to be independent, innovative, critical thinkers who will do exactly as I say!"

In the '70s, Daniel Kahneman and Amos Tversky showed that everybody is prone to some degree of irrationality, even those graced with towering intellect. Listen to some of the highly-educated pillars of theology, and you don't necessarily hear reason; rather, you're most likely to hear well-rationalized arguments carefully designed to "prove" a foregone conclusion. Meanwhile, a moderately-educated person with a developed ear for picking out rational errors in such arguments can easily point out where the genius has gone rationally astray.

Please note that a rational argument and rationalization are not the same thing. The -ize suffix indicates that an argument just SOUNDS LIKE it's rational, without actually being so. Pseudoscience isn't actually scientific; rationalization isn't actually rational. A well-trained logician can pick

apart the propositions and supporting arguments put forward by a proponent, and distinguish between sound logic and the irrational errors to which we're all naturally prone. The human mind is mostly intuitive by nature, but we can learn to use reason instead of intuition if we welcome the skillset logic requires.

You may have heard of "the Linda problem," which Kahneman and Tversky used in their work: "Linda is 31 years old, single, outspoken, and very bright. She majored in Philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations."

Survey participants were asked which was more probable: (A) Linda is a bank teller; or (B) Linda is a bank teller and a feminist. In the original study, 85% of respondents chose (B) as the more likely.

Logic breaks the problem into sets. There is a set of women who are bank tellers. There's a set of women who are feminists. And, there's an intersected set in which women are both bank tellers and feminists. However, some feminists are not bank tellers, and some bank tellers are not feminists, so the logical likelihood of an individual "Linda" having both traits (a single set) is smaller than the likelihood of her only having one trait or the other (two sets). The logically correct answer is (A).

Most of us studied Venn diagrams (sets and their intersections) in High School Algebra class, but a whole lot of us never really internalized Algebra sufficiently to become adept at "word problems," let alone applying set theory to our everyday decision-making. Relatively few of us have EVER studied Statistics.

We each like to think that we're "rational," just as we all like to think that we're "attractive" or "likeable." Sadly, such traits are varied among individuals. Almost nobody can be considered a 1 or a 10, and the majority of us probably clump together in a group somewhere on the scale between 1 and 10. By general observation, I'd propose that most people are rather low on the rationality scale (toward its intuitive end). Happily, we skeptics and critical thinkers seem prone to training ourselves (and each other) to gradually approach the higher end of the scale, using reason better and better over time.

We can teach others this skillset, too. Our collective efforts to debunk irrationality and educate others have value, and are indeed worthwhile.

The Times article reported that Psychology Professor Keith Stanovich has studied the correlation of high intelligence with what he terms "dysrationalia," or the tendency to think irrationally. As early as 2008, his studies showed only a weak correlation between the distinct traits; in fact, there was a slight tendency for the highly-intelligent to be less likely to think rationally. Other studies have proposed that intelligent people are better at rationalizing their intuitive (and erroneous) thinking, so they may be less likely to entertain challenges to their thinking patterns.

Stanovich has adopted the idea of a Rationality Quotient (R.Q.), to be used much like the more familiar scale of Intelligence Quotient (I.Q.). One with a higher R.Q. would have a greater tendency to step back and review his/her own thinking, thus self-correcting the tendency toward faulty thinking. The more rational one is, the more one applies logical forms and rules to self-reflection and decision-making.

The journal Policy Insights From the Behavioral and Brain Sciences (a \$5 name if there ever was one!) reported in 2015 that psychologist Carey Morewedge (and colleagues) tested large (more than 200 subjects per study) groups to assess their susceptibility to decision-making biases. Following that initial baseline testing, some participants were selected to watch a video on decision-making biases. Another group received training by playing computer games designed to reduce decision-making biases. "[T]he computer training led to statistically large and enduring decreases in decision-making biases," improvements indicated in tests taken right after training, and after a period of two months. In other words, participants were taught to think more rationally.

This is all the more remarkable because studies have failed to demonstrate that I.Q. can be improved (despite many popular "intelligence training" games on the market). Experts say we have two forms of intelligence, "fluid" and "crystallized." The first involves our ability to think in the moment, and respond to a quickly-changing environment. The second involves our memory store of knowledge, wisdom, experiences, and stories (including the many parables, myths, dogmas, and other non-rational metaphoric examples with which we evaluate and guide our lives). Intuition generally falls within the crystallized group, since it's largely

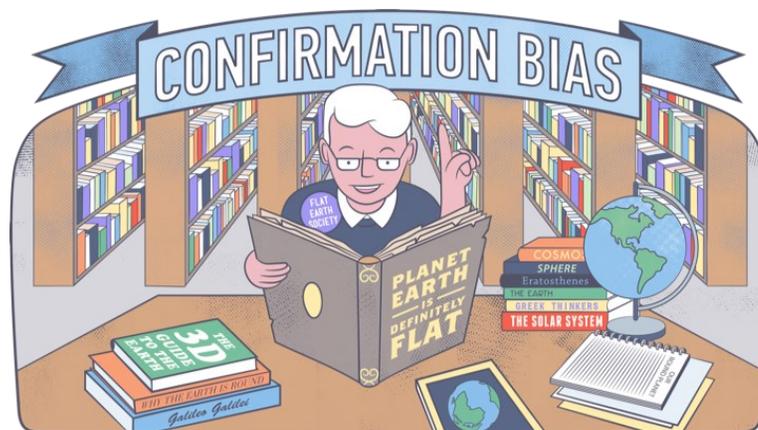
based on a storehouse of semi- or unconscious knowledge gained by life experience. Younger people, lacking that experience, tend to live with fluid intelligence, and the brain seems to be designed to allow young people to be adaptive and inventive in ways that older people sometimes find discomforting. Older people tend to process their thinking with experience and insight, which younger people find ponderous and boring. Because of this natural distinction in brain function, there may turn out to be some slight correlation between age and R.Q. (though we can all think of elders who refuse to reason, relying instead on habitual behaviors).

It's important not to jump to broad conclusions, here. Some people have a tendency to be sensitive to any attempt to challenge their cherished biases (religious and political opinions being right up near the cherished end of the spectrum). If someone shuts out emotionally-challenging training attempts, or drops out of uncomfortable training altogether, the effort is defeated (this should caution us to be gentle with our approach). Also, there are likely to be certain areas of intellectual pursuit in which training builds logic more readily than in other areas (many people are able to think quite rationally about mechanical challenges, yet they may find social challenges inscrutable). Also, there are more traits to a person's unique mindset than intelligence and the intuition/rationality spectrum, including their desire to display loyalty to established ideas. Some people are just waiting for our advice, and others are eager to reject it the very instant it is offered.

Yet, if research continues to lead to effective computer game programs that help people to enjoyably learn to diminish their inherent intuitive biases, that's bound to be a good thing. It won't fix all the world's problems overnight, but even incremental improvement is moving in the right direction.

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



"AHA! I KNEW IT!"

PHACT CALENDAR

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 on the free parking garage on 17th street on the left hand side before Callowhill Street. It opens at 1:00 PM and closes at 6:00 PM. 17th Street is one way south bound. This meeting site is handicap accessible. **PhACT Meetings are Free and open to the public unless otherwise noted. Please try to arrive a few minutes early as the College now requires that meeting attendees sign in for security reasons. ID must be shown.**



Saturday, January 21, 2017 at 2:00 PM - Lecture

Dr. John Allen Paulos will discuss his new book *A Numerate Life - A Mathematician Explores the Vagaries of Life, His Own and Probably Yours.*

See Page 4 for more details.

Saturday, February 18, 2017 at 2:00 PM - Lecture

Professor Jonathan Nyquist, an environmental geologist geophysicist, will discuss:
Disasters: Geology vs. Hollywood

See Page 6 for more details.

Saturday, March` 18, 2017 at 2:00 PM - Lecture

Program TBA

Saturday, April 15, 2017 at 2:00 PM - Lecture

Dr. Paul Offit, M.D. will discuss his new book *Pandora's Lab: Seven Stories of Science Gone Wrong*

See Page 7 for more details.

Saturday, May 20, 2017 - PhACT Expedition

Stay tuned dfor 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, January 9, 2017 at 6:00 PM 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.

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

<http://scienceontapphill.com/>

Wednesday, January 11, 2017 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/

Saturday, January 14, 2017 at 10am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA 19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

The Hot Spots and Storied Plots

In life and in death, we all have stories to tell and what better place to hear tales of wonder than Philadelphia's most famous home of the dead? 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. "The Hot Spots and Storied Plots" will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday and Second Saturday tour series.

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online.

Thursday, January 19, 2017 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

David Grinspoon | Earth in Human Hands: Shaping Our Planet's Future

Dr. David Grinspoon is the inaugural Chair of Astrobiology at the U.S. Library of Congress. With research focusing on climate evolution and the conditions for life elsewhere in the cosmos, he has consulted on interplanetary space missions for NASA, The European Space Agency, and the Japanese Space Agency. His technical papers, popular science writing, and lectures have appeared across a vast spectrum of media. "A remarkable synthesis of natural history, planetary science, extinction histories... and the human effect on the world" (Forbes), *Earth in Human Hands* challenges us to grow into our role as caretakers of our world.

Cost: FREE

Exploring the intersection of science, technology, and experience, Steven Johnson is the author of the bestselling *Where Good Ideas Come From*, *Everything Bad Is Good for You*, and *How We Got to Now*, which he adapted into a popular PBS and BBC series. Johnson is also the creator of the influential online magazine FEED and the website plastic.com, and was one of Prospect magazine's Top Ten Brains of the Digital Future. A look at the ways novelty, wonder, and amusement have driven innovation, *Wonderland* is "a swashbuckling argument for the centrality of recreation to all of human history" (New York Times).

Cost: FREE

Tuesday, January 24, 2017 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

<http://www.upenn.edu/pennnews/science>

PENN SCIENCE CAFÉ

Catherine McDonald, assistant nursing professor, School of Nursing Science
"Teens and Distracted Driving"

Catherine McDonald studies adolescent drivers, specifically what distracts them from keeping their eyes on the road. She calls it "driver inattention," and it's been her research focus for almost a decade. Using a car simulator that has a seat, seat belt, dashboard and gearshift, even a radio and side view mirrors, she observes where some of the newest drivers on the road lose focus. In this Penn Science Café, she'll discuss the latest findings of her work, plus showcase some the simulation scenarios the teenagers face.

Free and Open to the Public.

Tuesday, January 24, 2017 - 7:00pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

Science After Hours

Adults Evening

Ring in 2017 at our Science Speakeasy! Dress in your 1920s finest and explore bootlegging, betting, booze and other underground shenanigans

PhACT Lecture

**Saturday, January 21, 2017
At 2:00 PM**

**Professor John A. Paulos
will discuss his recent book:**

*A Numerate Life - A Mathematician
Explores the Vagaries of Life, His
Own and Probably Yours.*

See page 4 for more details.

Tuesday, January 24, 2017 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Steven Johnson | Wonderland: How Play Made the Modern World

SOCRATES CAFE is nationwide network of philosophical discussion groups. Free and open to the Public. All are welcome.

- 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.
- At 2 PM on the first Thursday of each month and at 7 PM on the third Thursday of each month at Glenside Free Library, 215 S. Keswick Avenue, Glenside, PA.
- At 10:30 AM to Noon on the second Wednesday of each month at Abington Free Library, 1030 Old York Road, Abington, PA.



of the Prohibition era. Knock twice, the password is "science."

This event is 21+.

Due to the popularity of this event, we strongly recommend that you purchase tickets in advance as capacity is limited and may sell out.

Wednesday, January 25, 2017 at 7:00 PM at Commonwealth Chateau, Chestnut Hill College, 9230 Germantown Avenue, Philadelphia, PA 19118

The Institute for Science and Religion

<http://www.irands.org>

Human Origins: Recent Findings from Genetics

John Braverman, SJ, PhD

Associate Professor of Biology, St. Joseph University

Where did we come from? This lecture offers an informed updating using current scientific conclusions from population genetics. The origin of modern humans, their migrations, and interbreeding with other species is presented in dialog with Catholic theology.

Free and Open to the Public. A free will donation is requested.

Monday, January 30, 2017 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.org/>

Benjamin Franklin's Experiments

We all think we know the story of Benjamin Franklin, we know the story of him flying a kite in a thunderstorm, but do you know the other inventions he worked on?

Join us on Monday, January 30th, 2017 as we welcome Mike Kochan who will be presentation and demonstrating some of Benjamin Franklin's Experiments. A short business meeting will start around 7:15pm. The lecture will start at 7:30pm. MaGreks Pub and Grill will be running a 1/2 price special on burgers that night. We encourage you to join our membership for the very small and reasonable tax deductible amount of \$20

Mike will bring some reproductions of Franklin's machines he used in his experiments as well as audience participation in some experiments to help tell the story of Benjamin Franklin's involvement in these scientific experiments.

Mike's presentation will show Franklin's place in the history of the discoveries in electricity. The presentation will start with the Greeks, move to the seventeenth century then the eighteenth century and finish in mid eighteenth century with a demonstration of his famous kite experiment. The talk will use a combination of a power point as well as replicas of some of his experiments that the guests can do themselves bringing the history of developments in electricity to life. Mike has the ability over the years to make museum quality examples of the technology of the eighteenth and nineteenth century technology and is currently portraying Franklin in venues that include children as well as adults.

Free and Open to the Public.

Wednesday, February 1, 2017 at 6:00PM - 8:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Great Beasts of Legend Lecture Series

MONSTERS OF THE MAYA COSMOS

Dr. Simon Martin, Associate Curator, American Section, Penn Museum

The Maya universe was populated by a variety of strange beasts and hybrid entities, some as actors in mythic narratives, others as symbolic representations of the sky, earth, and netherworld. However bizarre and complex their form, each had a coherent part to play in a wider religious system. One of the more energetic areas in Maya studies today is the effort to fathom their meanings and, by doing so, enter the imagination and consciousness of an ancient American people.

Admission: \$5 single lecture advance ticket (\$2 Penn Museum members); \$10 at the door.

Tuesday, February 7, 2017 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

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

Ben Franklin's Navy

Tim McGrath

Tuesday, February 7, 2017 at 6:00 PM at **World Cafe Live, 3025 Walnut Street, Philadelphia**

<http://www.upenn.edu/pennnews/science>

PENN LIGHTBULB CAFÉ

Bethany Wiggin, associate professor of German and director of the Penn Program in Environmental Humanities, School of Arts & Sciences

"Forgotten Places, Unlikely Alliances and Radical Hope on an Urban River"

The banks of the lower, tidal Schuylkill River in Philadelphia support both an oil refinery and a bird sanctuary. The river is home both to the eastern seaboard's largest oil port, in operation since the 1870s, and long-standing residential neighborhoods. This talk explores the history of these entanglements, drawing on collaborations of artists, scientists, historians, community partners and urban planners catalyzed by the Wet-Land Project, a floating lab for experiments in sustainability, moored at Bartram's Garden. And it asks, how we might hope to envision the future of this river and the many lives it sustains.

Free and Open to the Public.

Tuesday, February 7, 2017 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

<http://www.easternstate.org/home>

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections. The Searchlight Series discussions take place the first Tuesday of every month, free and open to the public. No reservations required.

The Searchlight Series is supported in part by a grant from The George W. Rentschler Foundation.

Free. Reception to follow

Wednesday, February 8, 2017 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/

Thursday, February 9, 2017 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

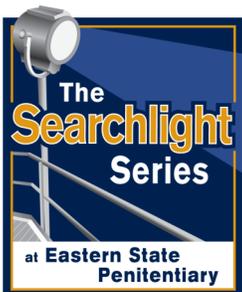
<http://libwww.freelibrary.org/authorevents/>

Daniel C. Dennett | From Bacteria to Bach and Back: The Evolution of Minds

In conversation with Adam Gopnik "Perhaps America's most widely read (and debated) living philosopher" (New York Times), Daniel C. Dennett is the author of a score of books that explore the intersection of human consciousness and evolutionary biology, including *Consciousness Explained*, *Darwin's Dangerous Idea*, and *Intuition Pumps and Other Tools for Thinking*. He is Co-Director of the Center for Cognitive Studies and Austin B. Fletcher Professor of Philosophy at Tufts University. Building on ideas from computer science and biology, *From Bacteria to Bach and Back* posits bold stances upon how we came to have conscious minds.

at Eastern State Penitentiary, 2027 Fairmount Avenue Philadelphia, PA 19130

Phone: (215) 236-3300



The Searchlight Series: Conversations About Crime, Justice, and the American Prison System

Eastern State Penitentiary Historic Site partners with nationally recognized penologists and educators to present an ongoing discussion series about crime, justice, and the American prison system. The Searchlight Series discussions take place the first Tuesday of every month, free and open to the public. No reservations required. See website at:

<http://www.easternstate.org/searchlight-series>

A longtime writer for The New Yorker, Adam Gopnik is the author of *Paris to the Moon* and *Angels and Ages: Lincoln, Darwin, and the Birth of the Modern Age*, among other books.

Individual tickets and subscriptions go on sale Tuesday, January 17 at 10:00 AM!

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

Saturday, February 11, 2017 at 10am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

www.thelaurelhillemetery.org

The Hot Spots and Storied Plots

In life and in death, we all have stories to tell and what better place to hear tales of wonder than Philadelphia's most famous home of the dead? 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. "The Hot Spots and Storied Plots" will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday and Second Saturday tour series.

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online.

Saturday, February 11, 2017 at 1 pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Til Death do us Part: The Love Stories of Laurel Hill

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$20/person; . Tickets can be purchased at the door or online.

Monday, February 13, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: What Clean Smells Like: Commercial Chemists and the Politics of Women's Work in the Mid-Century United States

Free and Open to the Public

Monday, February 13, 2017 at 6:00 PM 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.

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

<http://scienceontapphilly.com/>

Thursday, February 16, 2017 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

Sex on the Reef: An Illustrated Presentation by

Alison Sweeney, University of Pennsylvania

If soft moonlight reflecting on warm ocean water sounds romantic to you, you're not alone—this scene is also ideal for coral reproduction. Once a year, entire reefs release reproductive matter into the ocean in a matter of hours. While scientists believe this synchronized spawning is driven by lunar cycles and water temperature, many aspects of coral love lives remain a mystery. Dr. Alison Sweeney straddles the worlds of physics and biology in her quest to understand light-related biological phenomena. She will share her insights into the sex lives of coral at a special Valentine's-themed Weeknights at the Wagner.

Free and Open to the Public

Thursday, February 16, 2017 at 5:30pm to 7:00pm at the American Philosophical Society, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia

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

Frontier Country: The Politics of War in Early Pennsylvania

In Frontier Country, APS Librarian Patrick Spero offers a new interpretation of Pennsylvania's history during the colonial and revolutionary eras. He argues that Pennsylvania's development was forged on its frontiers through a series of formative but until now largely-overlooked confrontations: an eight-year-long border war between Maryland and Pennsylvania in the 1730s; the Seven Years' War and conflicts with Native Americans in the 1750s; a series of frontier rebellions in the 1760s that rocked the colony and its governing elite; and wars Pennsylvania fought with Virginia and Connecticut in the 1770s over its western and northern borders. These violent encounters created what Spero describes as a distinctive "frontier society" on the eve of the American Revolution that transformed the once-peaceful colony of Pennsylvania into a "frontier country."

This event is free and open to the public. Please register to attend.

Monday, February 20, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: A Better Mousetrap for Your Armpit: Deodorant and Technological Innovation

Free and Open to the Public

Tuesday, February 21, 2017 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

<http://www.upenn.edu/pennnews/science>

PENN SCIENCE CAFÉ

Lauren Sallan, assistant professor of earth & environmental science, School of Arts & Sciences

"The Rise of Tiny Fish"

The 64,000 living species of vertebrates dominate ecosystems on land (as tetrapods, including humans) and in the sea (as ray-fin fishes and sharks.) The rise of vertebrates in the Paleozoic (542-250 million years ago) is usually cast as a gradual march towards bigger and better things. Paleontologist Lauren Sallan will show that new, 'big data' approaches to the early fossil record have shown that modern vertebrate biodiversity is the unlikely, but predictable, result of global change, environmental challenges, ecological interactions and even mass extinction.

Free and Open to the Public.

Thursday, February 23, 2017 at 6:00PM - 7:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

ALCOHOL IN THE ANCIENT WORLD KEYNOTE ADDRESS

Beer, wine, and other fermented beverages have played an important role in the social, political, economic, and religious lives of humans for thousands of years. At this free conference, hosted by the University of Pennsylvania's Center for Ancient Studies, Penn graduate students from diverse disciplines present current research that focuses on the role of alcohol in ancient times. Friday evening's Keynote Speaker is Dr. Patrick McGovern, Scientific Director of the Biomolecular Archaeology Project for Cuisine, Fermented Beverages, and Health at the Penn Museum, and author of numerous books, including *Ancient Wine* (Princeton University), *Uncorking the Past* (University of California), and a soon-to-appear new book, *Ancient Brews Rediscovered and Re-Created* (WW Norton, 2017). Details at the Center for Ancient Studies website: www.sas.upenn.edu/ancient.

Free Admission

Monday, February 27, 2017 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.org/>

Lecture: Brothers in Arms: American Independence and the Men of France and Spain Who Saved It

The success of the War of American Independ-

PhACT Lecture

**Saturday, February 18, 2017
at 2:00 PM**

**Professor Jonathan Nyquist,
will discuss:**

**Disasters:
Geology vs. Hollywood**

See Page 6 for more details

ence depended on substantial military assistance provided by France and Spain, which saw their strategic interests align with those of America in the fight against England.

Join us on Monday, February 27, 2017 as we welcome Larrie D. Ferreiro who will talk about his new book "Brothers at Arms: American Independence and the Men of France and Spain Who Saved It". A short business meeting will start around 7:15pm. The lecture will start at 7:30pm. MaGreks Pub and Grill will be running a 1/2 price special on burgers that night. We encourage you to join our membership for the very small and reasonable tax deductible amount of \$20.

Free and Open to the Public.

Tuesday, February 28, 2017 - 7:00pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu> **Science After Hours**

Adults Evening

Go big for Fat Tuesday and join us for a scientifically sinful celebration of the senses. For a night of indulgences, the museum will be filled with music and revelry.

This event is 21+.

Due to the popularity of this event, we strongly recommend that you purchase tickets in advance as capacity is limited and may sell out.

Monday, February 27, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: Rethinking Industrial Patronage of Academic Research in the Early Cold War

Free and Open to the Public

Wednesday March 1, 2017 at 6:00PM - 8:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Great Beasts of Legend Lecture Series UNDERWATER PANTHERS AND THEIR PLACE IN THE NATIVE AMERICAN COSMOS

Dr. Megan Kassabaum, Weingarten Assistant Curator, American Section, Penn Museum

Archaeologists generally agree that certain beliefs about the cosmos are broadly shared among indigenous peoples of the Americas. Though the details vary wildly, the world is generally seen as consisting of three layers—the Above World, the Middle World, and the Beneath World. While we live our every day lives in the Middle World, the Above and Beneath Worlds are inhabited by a variety of supernatural beings. One of the most intriguing characters to inhabit the Beneath World is the underwater panther, a composite creature with both feline and serpentine characteristics that is associated with the dangerous yet beneficial powers of rivers, waterfalls, whirlpools and caves.

Admission: \$5 single lecture advance ticket (\$2

Penn Museum members); \$10 at the door.

Saturday, March 5, 2017 at 10am at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Tour Guide Training Workshop (Part 1)

Free parking is located in the lot across the street from the Gatehouse.

The event is FREE.

Tuesday, March 7, 2017 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

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

The Revolution's Last Men: The Soldiers Behind the Photographs

Don N. Hagist

The six surviving soldiers who fought in the Revolutionary War were interviewed and photographed in 1864. A researcher and writer tells their stories.

Free.

Tuesday, March 7, 2017 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

<http://www.easternstate.org/home>

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections. The Searchlight Series discussions take place the first Tuesday of every month, free and open to the public. No reservations required.

The Searchlight Series is supported in part by a grant from The George W. Rentschler Foundation.

Free. Reception to follow

Tuesday, March 7, 2017 at 6:00 PM at **World Cafe Live, 3025 Walnut Street, Philadelphia**

<http://www.upenn.edu/pennnews/science>

PENN LIGHTBULB CAFÉ

Brendan O'Leary, Lauder Professor of Political Science, School of Arts & Sciences

What Are the Implications of UKEXIT for Northern Ireland and Ireland? Can the Good Friday Agreement Survive?"

Brendan O'Leary, a U.S. and Irish citizen, will discuss what the so-called BREXIT might mean for both parts of Ireland, including the likely outcomes, good and the not-so-good. A specialist in power sharing and constitutional reconstruction, O'Leary has worked with the European Union, the United Nations and the Kurds of Iraq. He was also influential in the making of the Good Friday Agreement of 1998, which offered a peaceful resolution to nearly 30 years of conflict between Northern Ireland and the Republic of Ireland.

Free and Open to the Public.

Wednesday, March 8, 2017 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/

Saturday, March 11, 2017 at 10am at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

The Hot Spots and Storied Plots

In life and in death, we all have stories to tell and what better place to hear tales of wonder than Philadelphia's most famous home of the dead? 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. "The Hot Spots and Storied Plots" will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday and Second Saturday tour series.

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online.

Saturday, March 11, 2017 at 1 pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

St. Patrick's Day Tour, Toasts, and Tastes.

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$20/person. Tickets can be purchased at the door or online.

Monday, March 13, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org>

Brown Bag Lecture: Pharmaceutical Crossings: Sleeping Sickness Research between Europe, Colonial Africa, and the United States, 1890–1950

Free and Open to the Public

Monday, March 13, 2017 at 6:00 PM 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.

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

<http://scienceontaphilly.com/>





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/

Tuesday, March 14, 2017 7:30 p.m at the Free Library of Philadelphia, 1901 Vine Street, 19103
<http://libwww.freelibrary.org/authorevents/>

Kory Stamper | Word by Word: The Secret Life of Dictionaries

A lexicographer for the Merriam-Webster dictionary, Kory Stamper discusses the subtleties of the English language in the venerable volume's popular "Ask the Editor" video series. Her writing has appeared in The Washington Post, the Chicago Tribune, and The Guardian, among other periodicals. A medievalist by training, Stamper knows a number of dead languages, has lectured on lexicography around the world, and was notably responsible for explaining Merriam-Webster's recent addition of the term "F-Bomb" to the dictionary. In Word by Word, she opens up the complicated, obsessive, and fun world of dictionaries and the quirky people who shape the way we communicate.

Cost: FREE

Tuesday, March 14, 2017 - 7:00pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu> **Science After Hours**

Adults Evening

Shake up the night with stars, nebulae and distant galaxies--served on the rocks. Garnish it with a slice of science fiction and toast to the cosmos. Cheers!

This event is 21+.

Due to the popularity of this event, we strongly recommend that you purchase tickets in advance as capacity is limited and may sell out.

Thursday, March 16, 2017 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

Victorian Botanical Collections

An Illustrated Lecture by ELAINE AYERS
Princeton University

Free and Open to the Public

Thursday, March 16, 2017 at 5:30pm to 7:00pm at the American Philosophical Society, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia

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

The Genius of Birds

Presenter: Jennifer Ackerman

If you were to divide the animal world

into the smart and the not-so-smart, you might put birds squarely in the 'dim bulb' category. For decades, people have written off birds as largely witless, driven solely by instinct, and their brains as primitive, capable of only the simplest mental processes. But it is not so. In recent years, science has discovered that birds are much, much more intelligent than we ever supposed, capable of abstract thinking, problem-solving, remembering, learning by example (as children do), recognizing faces, even conversing in a meaningful way—all with a packet of brain so tiny it would fit inside a walnut.

The Genius of Birds explores the new view of birds as 'thinkers'—cunning, playful, witty, greedy, cranky, joyful, competitive. It looks at the intelligence of birds within the context of easily observed behavior in our own surroundings and brings to it the latest science from lab and field.

This event is free and open to the public. Please register to attend.

PhACT Lecture

Saturday, March 18, 2017
at 2:00 PM

Program TBA

Monday, March 20, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: Commercializing Academic Knowledge and Reputation in the Late 19th and Early 20th Centuries: Photography and Beyond

Free and Open to the Public

Tuesday, March 21, 2017 at 6:00 PM at World

Cafe Live, 3025 Walnut Street, Philadelphia
<http://www.upenn.edu/pennnews/science>
PENN SCIENCE CAFE

Richard Berk, professor of criminology and statistics, School of Arts & Sciences

"Big Data and Algorithms: Can They Be Fair and Accurate at the Same Time?"

Working with Penn colleagues in statistics and computer science, Richard Berk develops and deploys algorithms that assist in criminal-justice decision making. His computer software is used to help inform whether a prison inmate is released on parole and the kind of supervision provided to individuals on probation. He is currently working on projects regarding release decisions at arraignment and police handling of incidents of intimate-partner violence. In each application, the goal is to improve current practice. Nevertheless, these tools can be controversial because of errors and potential unfairness for the people affected. Are there tradeoffs between accurate forecasts of criminal behavior and fairness, and what about the consequences for potential crime victims?

Free and Open to the Public.

Thursday, March 23, 2017 at 7:00 PM at Commonwealth Chateau, Chestnut Hill College, 9230 Germantown Avenue, Philadelphia, PA 19118

The Institute for Science and Religion

<http://www.irands.org>

Dreaming: A Gateway to the Unconscious?

Bindu Methikalam, PhD

Assistant Professor of Psychology, Chestnut Hill College

Dreams are a fascinating way to gain new or deeper understanding of one's identity. At the same time, there are often misconceptions about dreams and exploring dreams can be confusing. This interactive lecture will provide an overview of present research on dreams as well as some of the cultural factors associated with dream work.

Dr. Methikalam is Assistant Professor in the Clinical Psychology program and Assistant Director of Clinical Training at Chestnut Hill College. She has experience with individuals, couples, and group therapy. Her clinical and research interests include perfectionism, family expectations, multicultural issues, and South Asian concerns, particularly, immigrant experiences, acculturation, cultural identities, and the psychology of women.

Free and Open to the Public. A free will donation is requested

Monday, March, 27, 2017 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.org/> Lecture: The Swamp Fox: How Francis Marion Saved the American Revolution

In the darkest days of the American Revolution, Francis Marion and his band of militia freedom fighters kept hope alive for the patriot cause during the critical British "southern campaign." Like the Robin Hood of legend, Marion and his men attacked from secret hideaways before melting back into the forest or swamp. Employing guerrilla tactics that became commonplace in later centuries, Marion and his brigade inflicted losses on the enemy that were individually small but cumulatively a large drain on British resources and morale.

Although many will remember the stirring adventures of the "Swamp Fox" from the Walt Disney television series of the late 1950s and the fictionalized Marion character played by Mel Gibson in the 2000 film "The Patriot," the real Francis Marion bore little resemblance to either of those caricatures. But his exploits were no less heroic as he succeeded, against all odds, in repeatedly foiling the highly trained, better-equipped forces arrayed against him. Francis Marion.

Join us on Monday, March 27th as we welcome **John Oller** who will talk about his new book "The Swamp Fox: How Francis Marion Saved the American Revolution". A short business meeting will start around 7:15pm. The lecture will start at 7:30pm. MaGreks Pub and Grill will be running a 1/2 price special on burgers that night. We encourage you to join our membership for the very small and reasonable tax deductible amount of \$20.

Free and Open to the Public.

Saturday, April 1, 2017 at 1 pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

April Fools: Famous People Not Buried at Laurel Hill

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$15/person. Tickets can be purchased at the door or online.

Saturday, April 2, 2017 at 1 pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Cryptic Crypts: Egyptian Symbolism at Laurel Hill

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$15/person. Tickets can be purchased at the door or online.

Monday, April 3, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

www.chemheritage.org Tel: 215-925-2222

Brown Bag Lecture with Deanna Day

Free and Open to the Public

Monday, April 3, 2017 at 6:30 PM at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

www.collphyphil.org/prog_calendar.htm

The Kate Hurd-Mead Lecture

Lady Mary's Legacy: Vaccine Advocacy from The Turkish Embassy Letters to Video Games

On April 1, 1717, Lady Mary Wortley Montagu wrote her famous "Letter to a Friend" from the Turkish Embassy, describing the process of smallpox inoculation. With that letter, she became one of the earliest vaccination advocates, joined over the next three hundred years by celebrities and scientists, pop culture icons and heads of state, patients and game developers. This talk will explore the colorful and controversial history of vaccine advocacy from Lady Mary to The Pox Hunter, a digital strategy game set in Benjamin Rush's Philadelphia.

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.

Tuesday, April 4, 2017 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

<http://www.easternstate.org/home>

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections. The Searchlight Series discussions take place the first Tuesday of every month, free and open to the public. No reservations required.

Free. Reception to follow

Tuesday, April 4, 2017 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

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

Meet Alexander Hamilton

Alexander Hamilton, as interpreted by Eben Kuhns

The young Hamilton and his views on life, liberty, and the pursuit of happiness. Presented in cooperation with the American Historical Theater.

Free.

Tuesday, April 4, 2017 at 6:00 PM at **World Cafe Live, 3025 Walnut Street, Philadelphia**

<http://www.upenn.edu/pennnews/science>

PENN LIGHTBULB CAFE

Nancy Steinhardt, chair of the Department of

East Asian Languages and Civilizations and professor of East Asian art, School of Arts & Sciences

"How Chinese Architecture Became Modern, 1927-1977"

From 1927, when the first group of Chinese architects trained abroad returned home, to 1977, the year Mao Zedong died, Chinese architecture transformed from buildings like the Forbidden City to a modern building system inspired by Western architecture. France, the United States, the Soviet Union, Taiwan and Japan are all part of this story that takes place during the war-torn 1930s and 1940s, through the Soviet advisors of the 1950s and the Cultural Revolution of 1966-1976. Sun Yatsen and Mao were central to China's drive toward modernism in this tumultuous half-century.

Free and Open to the Public.

Wednesday April 5, 2017 at 6:00PM - 8:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

Great Beasts of Legend Lecture Series BEASTS IN THE NIGHT SKY: THE CONSTELLATION MYTHS OF GREECE AND ROME

Dr. Patrick Glauthier, Department of Classical Studies, University of Pennsylvania Aries the Ram, Taurus the Bull, Cetus the Sea-monster - there's no shortage of mythical animals among the constellations of ancient Greece and Rome. But why do such creatures populate the heavens in the first place? And what did they mean to the societies that first identified and named them? Although it can be hard for us to clearly identify two Bears circling up above, the ancient imagination saw animalistic drama and intrigue all over the night sky, and the particulars of these narratives were often felt to impact life on earth. This talk will explore the history of some of these constellations, their representations in ancient art and literature, and their role in ancient Greco-Roman society more broadly.

Admission: \$5 single lecture advance ticket (\$2 Penn Museum members); \$10 at the door.

Saturday, April 8, 2017 at 10am at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

The Hot Spots and Storied Plots

In life and in death, we all have stories to tell and what better place to hear tales of wonder than Philadelphia's most famous home of the dead? 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. "The Hot Spots and Storied Plots" will be pre-



sented monthly as part of Laurel Hill Cemetery's Fourth Friday and Second Saturday tour series.

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online

Saturday, April 8, 2017 at 1 pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

Designing for the Dead: Art and Architecture of Laurel Hill

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$15/person. Tickets can be purchased at the door or online.

Sunday, April 9, 2017 at 1 pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

America Enters the Great War: Laurel Hill's WWI Veterans

Free parking is located in the lot across the street from the Gatehouse.

The cost is \$15/person. Tickets can be purchased at the door or online.

Monday, April 10, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: Boerhaave's Mineral Chemistry and Its Influence on 18th-Century Pharmacy in the Netherlands

Free and Open to the Public

Monday, April 10, 2017 at 6:00 PM 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.

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

<http://scienceontapphill.com/>

Wednesday, April 12, 2017 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/

PhACT Lecture

**Saturday, April 15, 2017
at 2:00 PM**

**Dr. Paul Offit, M.D. will discuss
his new book**

***Pandora's Lab: Seven Stories
of Science Gone Wrong***

See Page 7 for more details.

Monday, April 17, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: Man-Made: Counterfeiting Nature in Early Modern Europe

Free and Open to the Public

Monday, April 24, 2017 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.org/>

Lecture: Dunmore's War, the Last Conflict of America's Colonial Era

Known to history as "Dunmore's War," the 1774 campaign against a Shawnee-led Indian confederacy in the Ohio Country marked the final time an American colonial militia took to the field in His Majesty's service and under royal command. Led by John Murray, the fourth Earl of Dunmore and royal governor of Virginia, a force of colonials including George Rogers Clark, Daniel Morgan, Michael Cresap, Adam Stephen, and Andrew Lewis successfully drove the Indians from the territory south of the Ohio River in parts of present-day West Virginia, Ohio, and Kentucky.

Join us on Monday, April 24th, 2017, as we welcome back Glenn F Williams to the American Revolution Round Table of Philadelphia as he presents his book, "Dunmore's War: The Last Conflict of America's Colonial Era". A short business meeting will start around 7:15pm. The lecture will start at 7:30pm. MaGreks Pub and Grill will be running a 1/2 price special on burgers that night. We encourage you to join our membership for the very small and reasonable tax deductible amount of \$20

Free and Open to the Public.

Monday, May 1, 2017 at noon at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Brown Bag Lecture: The Composition of Life and Health: Elements, Particles, and Atoms in Late Renaissance Physiology

Free and Open to the Public

Tuesday, May 2, 2017 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

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

Special Location: Park Theater • Advance Tickets required due to capacity

George & Martha Washington: In Perfect Felicity

George & Martha Washington, interpreted by John Lopes & Carol Spacht

General and Mrs. George Washington share the story of their courtship and 40-year marriage.

PhACT Event

Saturday, May 20, 2017

PhACT Expedition

Details TBA

Tuesday, May 2, 2017 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

<http://www.easternstate.org/home>

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections. The Searchlight Series discussions take place the first Tuesday of every month, free and open to the public. No reservations required.

The Searchlight Series is supported in part by a grant from The George W. Rentschler Foundation.

Free. Reception to follow

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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

Name: _____

Address: _____

Phone: _____ E_mail _____

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

or to pay online go to
www.PhACT.org

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 **premier** 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 2016/17

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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.

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Phactum Editor, Ray Haupt
phactpublicity@aol.com

The PhACT website is: www.phact.org



Robert Hutchings Goddard
1882 - 1945

"Professor Goddard...does not know the relation of action to re-action, and the need to have something better than a vacuum against which to react....he only seems to lack the knowledge ladled out daily in high schools."

-- 1920 New York Times editorial on Robert Goddard's rocket work. [The New York Times printed a retraction to this---in 1969, when the Apollo II astronauts were on their way to the Moon.]