

Absolute truth belongs only to one class of humans ... the class of absolute fools.

~ Ashley Montagu

Phactum

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Henry George

born Sept. 2, 1839, Philadelphia
died Oct. 29, 1897, New York City,



Land reformer and economist who in *Progress and Poverty* (1879) proposed the single tax: that the state tax away all economic rent—the income from the use of the bare land, but not from improvements—and abolish all other taxes.

Bridging the Left and Right Divide with Common Ground Henry George, Political Economist and Social Philosopher, Your Time Is Now!

by Mike Curtis

IN 1879, Henry George wrote these prophetic words:

“Given a community with republican institutions, in which one class is too rich to be shorn of its luxuries, no matter how public affairs are administered, and another so poor that a few dollars on election day will seem more than any abstract consideration; in which the few roll in wealth and the many seethe with discontent at a condition of things they know not how to remedy, and power must pass into the hands of jobbers who will buy and sell it as the Praetorians sold the Roman purple, or into the hands of demagogues who will seize and wield it for a time, only to be displaced by worse demagogues...”

....A corrupt democratic government must finally corrupt the people, and when a people become corrupt there is no resurrection. The life is gone, only the carcass remains;

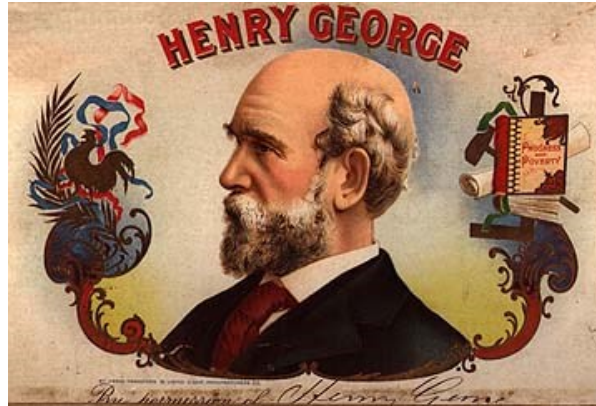
and it is left but for the plowshares of fate to bury it out of sight.”

– Henry George, *Progress and Poverty*, Chapter IV, How Modern Civilization May Decline

Well, the American economic system wasn't and isn't totally corrupt, but it is fundamentally corrupt. The foundation of American capitalism is private property in land, which includes unmined minerals, the airwaves, and all other natural opportunities. And that institution is reinforced with every shift from real estate to income and sales taxes. It is principally true that all taxes are paid out of what would otherwise go to the owners of land and other monopolies because there is no longer a free land opportunity. However, income and sales taxes levy no direct penalty for land speculation (non-use and under use of land), which misappropriates the free land and causes unemployment, unaffordable housing, and wages that tend to a

minimum below which productivity and the income from land itself would fall. *This is true simply because there is no free land and you can't make anything without it.*

We've intervened with the minimum wage, and, by some estimates, we are redistributing nearly a trillion dollars



a year with an array of welfare programs at every level of government simply because there aren't enough jobs and wages are so low—and even that isn't solving the problem.

Why wouldn't the coal miners, assembly line workers, and every other semi-skilled person vote for Trump? He actually promised them something. They heard the Democrats and their concern for poor illegal immigrants and their children who wanted to go to college, and for the refugees who fled from the wars and chaos of the Middle East, and, all the while, they as American citizens were working at dead-end jobs or unemployed while our government did lit-

Phactum Table Of Contents

<u>Bridging the Left and Right Divide With Common Ground: Henry George, Political Economist and Social Philosopher, Your Time is Now!</u>	p. 1
By Mike Curtis	
<u>Upcoming PhACT Events</u>	p. 10
<u>Letters to the Editor</u>	p. 15
<u>Various Ruminations</u>	p. 16
<u>September, October, November 2017</u>	p. 21
Meeting Reports	
<u>At the Wagner Free Institute of Science</u>	p. 25
<u>Why We Mustn't "Believe In" Science</u>	p. 26
By Paul Schlueter III	
<u>Marzipan Quixote (Poetry)</u>	p. 30
<u>Where is the Ghost</u>	p. 31
By Paul Schlueter III	
<u>PhACT Calendar</u>	p. 34

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: **OUTRAGE GAMBIT, THE** - The use of an angered, outraged, or otherwise vehement response to attempt to lend credibility to one's argument (particularly used in making a denial), with or without actual threats. A tactic which relies on distracting an accuser. The opposite of the pleasance gambit. Neither pleasance or vehemence constitutes evidence; in fact, the greater the passion offered the less likely that the party's argument can be supported rationally.

tle or nothing to help them.

From the news, you would think that things were getting pretty good right now. The percentage of people looking for work is at a long-time low. The Baby Boomers have reached retirement age and that could make room for jobs for another 3% of the adult population. However, while millions of jobs were given to new legal immigrants in 2016, there were 4.1 million more Americans living in poverty than there were in 2005 before the recession began.

The \$7.25 per hour federal minimum wage buys less of the basics than it did in 1950. Over the last 40 years, the median wage increased by 10% while productivity increased by 100%, and inflation takes more than the banks pay in interest.

With every increase in productivity, wages and interest are becoming a smaller portion of what is produced. There is never enough land sold so that all the people who represent the increase in population and those who were replaced by machines can work and afford a decent living. The rich are getting richer and the poor are in greater need of assistance.

Henry George, your time is now!

It would certainly be enough to say that the land on which we stand and from which everything is produced must

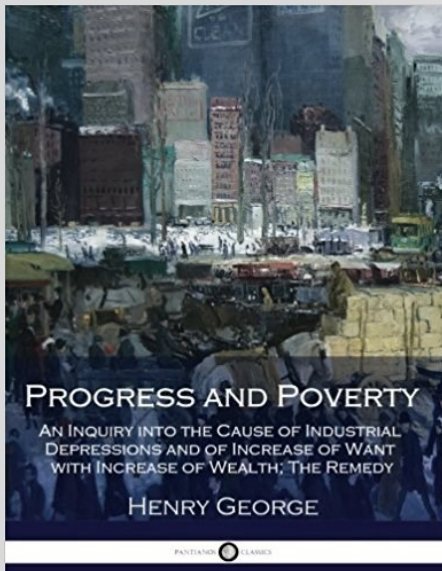
be a common opportunity: For without access to land, we would all die. However, the observations of Henry George make clear that there is a synergistic connection with community and with the socially created values that attach to land.

With every increase and concentration of population, there is a greater and greater potential to specialize labor, to accumulate special tools and machines for each specific operation, and to produce for exchange in economies of scale.

The roads and bridges, pipes and wires, police, and other public servants enable denser and more efficient populations, and the denser the population, up to a point, the more efficient the cooperations.

In America, as long as there was still a opportunity for free land, any increase in population or infrastructure that increased productivity on the free land also increased wages and the return to buildings and machines on all land from which people were able to move to the free land. That is because no one will work for someone else for less than that person can produce working for oneself. For many decades in the nineteenth century, America offered land that was free or nearly free and, with it, the highest wages in the world.

Where land is free, the population is always relatively sparse. As the population becomes more dense with a village



Progress and Poverty: *An Inquiry into the Cause of Industrial Depressions and of Increase of Want with Increase of Wealth; The Remedy* By Henry George

Publisher: CreateSpace Independent Publishing Platform (August 25, 2017)
First Published 1879 **ISBN-10:** 1975767098 **ISBN-13:** 978-1975767099

In *Progress and Poverty*, economist Henry George scrutinizes the connection between population growth and distribution of wealth in the economy of the late nineteenth century.

The initial portions of the book are occupied with refuting the demographic theories of Thomas Malthus, who asserted that the vast abundance of goods generated by an economy's growth was spent on food. Consequently the population rises, keeping living standards low, poverty widespread, and starvation and disease common.

Henry George had a different attitude: that poverty could be solved and economic progress preserved. To prove this, he draws upon decades of data which show that the increase

in land prices restrains the amount of production on said land; business owners thus have less to pay their workers, with the result being mass poverty especially within cities.

The radical solution George proposes is a land value tax, whereby owners of land must pay a levy on their holdings. Thus money is diverted directly from landowners, to be spent on alleviating the poverty of workers, improving the infrastructure and environment of urban and rural areas, and even giving every citizen a basic income to cover their necessities.

George is also concerned with the cyclical nature of the economy, which by the latter part of the 19th century clearly followed cycles of boom and bust. This instability is further aggravated by spikes in land prices and consequently rents, whereby both producers - such as factory builders and farmers - and workers are displaced. Thus, Henry George doubles down on his idea for the land value tax, highlighting its efficiency and the fact that land - unlike resources or labor - is a fixed and easily quantified thing.

Divided into ten books, which in turn comprise between two and five chapters each, *Progress and Poverty* sequentially proposes, and discusses the implementations, of this economic reform. The book was enormously popular with the American public; written in a plain but engaging style, the powerful argument George makes would impact economists and the public consciousness alike for decades to follow.

or a city, the increased population enables greater divisions of labor, more accumulations of capital, and more economies of scale. Trade is carried on with a greater efficiency. Each person becomes more productive, and, because all the land with denser populations is already owned and deeded for exclusive possession, the difference between the productivity of any particular parcel of land and that of the land that is still free is taken by the landowners.

The same thing is true for inventions and new technologies in general. Most machines increase productivity more on naturally superior land and land where population is dense. Farm machinery yields a greater result on the more fertile land; mining machinery increases productivity more with the richest deposits of ore; the elevator increases cooperation far more in a city than where the land is free.

Some of the surplus that results from the conscious and subconscious cooperations resulting from denser populations pays for the construction and maintenance of the infrastructure and public services that enable the denser populations. As Henry George points out, some of this synergistic production is the surplus that enriches the landholders but could be used for the enhancement and advancement of community, society, and civilization.

However, the history and reality of the United States shows the prevalence of land speculation—the holding of land in the expectation that it will increase in value. As local populations increase, as infrastructures are added, as inventions march on, productivity tends to increase in proportion to the density of population and the value of land increases with it.

Most land in its natural state yields relatively little or nothing. However, land with farming equipment, buildings, manufacturing machinery, or stores with inventories yield far more than the land and the capital separately could. That is to say, what the owner of capital (buildings, machinery, inventories) could charge others to borrow it and what the land without capital would yield is a fraction of what they yield together. The synergy from the combination of land and capital results from the mutual support of all the people and all the activities in the surrounding area—that larger and denser population is enabled by the infrastructure and public services. In order to get the highest yields from any parcel of land, it is necessary to combine it with a certain amount of capital (buildings, machinery, inventory).

Wages everywhere are determined by what can be produced where the land is free. The return to the owners of capital (buildings, machinery, and inventory) is whatever is necessary to induce the storing up of capital where the land is free. The rent on any particular land will be the entire amount produced minus what is paid to the workers and the owners of the capital. Taxes and theft simply lower the amount produced.

Although land has no cost of production or reproduction, it does have an income that can be compared to the in-

come of capital. Capital has an income and also a cost of reproduction and that relates to its value in exchange. Therefore, land can be equated to capital.

Whatever portion of the potential land rent is assured to the landowner is equated to capital. If the potential income from a parcel of land is \$100 per year, and the current rate of interest is 5%, someone would likely sell a parcel of land for \$2,000. That is because the seller could then buy \$2,000 worth of capital and continue receiving \$100 (interest) each year from the ownership of the capital. This process is called capitalization.

Now, because the income from many parcels of land has increased faster than the income from capital, people have come to expect that it will continue to do so. Therefore, those who are exchanging capital or money for land expect to pay a premium for the land—a speculative value based on the expectation of higher incomes in the future.

That presents each investor with two choices or a combination of the two choices when it comes to land. A parcel of land can be purchased as well as enough capital (buildings, machinery, inventory), to put the land to its most profitable use. In that way, the landowner receives the return on the capital, the highest possible amount of rent from the land and any increase in the selling value of the land.

Alternately, a parcel of land can be purchased that would be as valuable as the land and the buildings in the previous example. In this case, the landowner would simply wait until the selling value of the land increased. In some cases, land increases in value so fast that speculation (holding the land as an appreciating asset) is more profitable than the same total investment of land and capital where the object is to produce a good or service and receive the return on the capital, the actual land rent, and the increase in the selling price of the land.

As part of this equation, the real estate tax falls on the value of land and buildings and must be paid even when the land yields no income as is the case when it is held idle for speculation. In 25 states, it is calculated to be less than 1% of what the land and buildings are worth. Only six states charge more than 2% of what they are worth. However, the part of real estate taxes that falls on the selling value of the land diminishes the gains from the increase in the selling value which then discourages land speculation.

Some land speculators use the land in a way that generates just enough income to pay the taxes (such as surface parking lots and hot dog stands) while the selling value appreciates. In some cases, land was put to its highest and best use many decades ago and now is being grossly under used because its owner is more interested in the increase in the value of the land than the full income that would be possible were the building torn down and the site rebuilt to its highest and best use now.

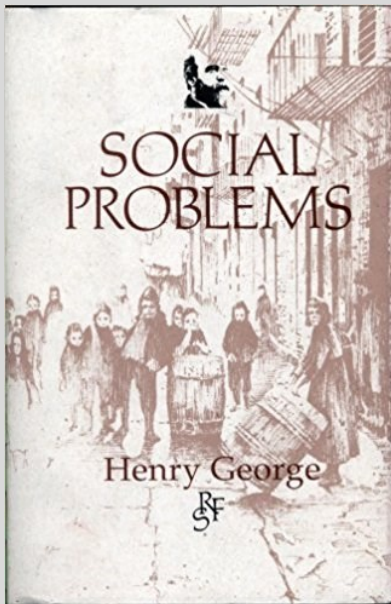
Much land is unused and much more is significantly

underused in every city. Look at the vacant lots and empty worthless buildings, surface parking, and the one, two, or three-story buildings interspersed with high-rise buildings in the most densely populated residential and business sections of every city. It requires far more infrastructure and public service to provide jobs and housing for the same number of people as development sprawls into the countryside.

The practice of land speculation (investing in land as an appreciating asset) goes back to the days before the United States became a nation. But, due to the decimation of so many indigenous peoples, the Louisiana Purchase, and the conquest of northern Mexico, it took until after 1900 before

there was absolutely no free land to be had in America. In the 1970s, the last homestead was given away by the government in Alaska.

However, because of the diminishing quality of the land that was still being offered for free or nearly free, American wages were clearly falling by the 1870s. *When there is no free land or the free land is so poor that it cannot yield a living to the vast majority of families that could migrate to it, wages of the least skilled and educated everywhere tend to a bare subsistence.* Workers with greater skill and knowledge get higher wages, depending on the supply and demand for each person's individual skill and knowledge. Without a free



Social Problems

By Henry George

Publisher: The Robert Schalkenbach Foundation , 1981

Originally published 1883

ISBN: 978-0911312171 Paperback: 296 pages

Henry George (1839-1897) was an American writer, politician and political economist, who was the most influential proponent of the land value tax, also known as the "single tax" on land. His most famous book was the 1879 *Progress & Poverty*. This book was written in 1883. He notes, "My endeavor has been to present the momentous social problems of our time... without that abstract reasoning which some of the principles of political economy require for thorough explanation. I have spoken in this book of some points not touched upon in 'Progress and Poverty,' but there are other points as to which I think it would be worth the while of those who may be interested by this book to read that."

He begins by stating that "A civilization which tends to concentrate wealth and power in the hands of a fortunate few, and to make of others mere human machines, must inevitably evolve anarchy and bring destruction." (Pg. 8) Democratic government can exist only "where wealth is distributed with something like equality... The man who is dependent on a master for his living is not a free man." (Pg. 15) Furthermore, although there are some mental and physical differences between men, "we already have men hundreds of millions of times richer than other men." (Pg. 51)

He states that "the capitalist is a helper, if he is not also a monopolist." (Pg. 57) But George would put no limits on acquisition: "Let him do as he pleases with his own, without restriction and without suggestion. If he gets without taking from others, and uses without hurting others, what he does with his own wealth is his own business and his own responsibility." (Pg. 87) The functions of government should be restricted to those necessary to the common welfare. (Pg. 171) "It is not the business of government to make men virtuous or religious, or to preserve the fool from the consequences of his own folly." (Pg. 173)

He summarizes, "The main source of the difficulties that menace us is the growing inequality in the distribution of wealth... In a society where the equality of natural rights is recognized, it is manifest that there can be no great disparity in fortunes... But, in a community where the soil is treated as the property of but a portion of the people, some of these people from the very day of their birth must be at a disadvantage... Our fundamental mistake is in treating land as private property." (Pg. 194-195) He proposes, "All it is necessary to do is to abolish all other forms of taxation until the weight of taxation rests upon the value of land irrespective of improvements, and take the ground-rent for the public benefit." (Pg. 208)

George's ideas were often viewed as an alternative to 19th century Socialism; and even some modern conservatives (e.g., William F. Buckley) are fans of his ideas---particularly the "single tax" proposal. His writings were ENORMOUSLY popular in his own day, and the fact that he has modern followers (e.g., The Robert Schalkenbach Foundation) attests to the continuing vitality of his ideas.

land alternative, wages at every level of skill and knowledge tend to an amount below which productivity and the rent of land would fall. That is to say, there is a point below which lower wages would diminish productivity even more than wages are lowered. Therefore, land rents would fall as well.

We have intervened with the minimum wage, the eight-hour day and many other requirements. Wages are higher than they would otherwise be, but the tendency of wages to a minimum remains. And many people who are willing and able to work are unable to participate in the wealth-producing economy.

Liberals want to intervene with higher legal minimum wages and safer working conditions while preserving the environment. They also want to continue the enormous redistributions of income that fund a myriad of welfare programs at every level of government because unemployment is so high. They point out that the increase in the minimum wage would reduce some of the welfare that is now needed because wages are so low. However, none of these measures directly penalize land speculation so they don't prevent unemployment or a shortage of housing which is the root of the problem.

Conservatives, while they are against increasing the minimum wage, want to reduce environmental regulations and lower taxes that fund welfare programs as a means of creating more jobs. These reductions in the cost of production could conceptually create jobs in the short run, but

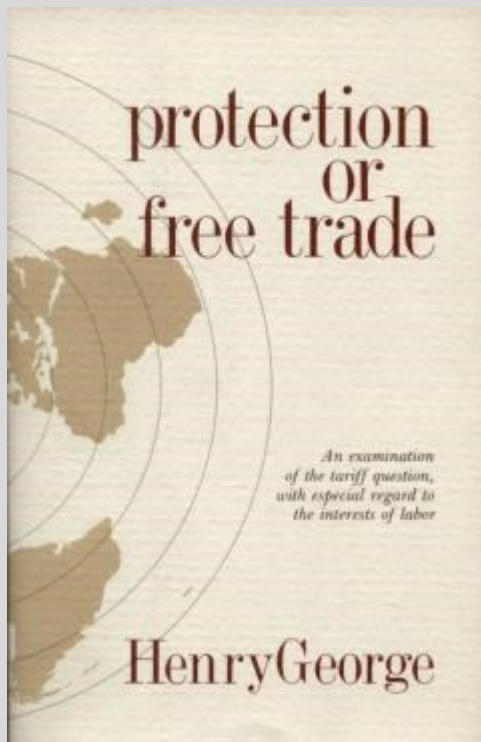
they don't prevent land speculation so they can't prevent unemployment or a shortage of housing in the long run.

America is in a struggle between two ideologies. One says that we are a national family: We must take care of those who are less fortunate than the majority. We must redistribute wealth to insure that all people have housing, education, and healthcare as well as provide for the normal functions of government.

The other ideology says the economy is paramount: Our government must support the normal functions of government that support the economy with infrastructure, order, and justice, but it has no right to redistribute wealth. The people, as individuals, must be responsible for their own employment and well being. Churches and charities must provide for those who are unable to take care of themselves.

Within these two very different philosophies lie two completely valid and compatible principles. (1) What individuals and corporations produce belong to their producers and (2) There are socially created values and they belong to all of the people who comprise the community and society as a whole.

The Conservatives tend to include along with those values produced by individuals and corporations, natural opportunities which yield advantages, as well as values that are created by the conscious and subconscious cooperations of the community and society as a whole. These include values which indirectly result from investments in



Protection or Free Trade

By Henry George

Publisher: Obscure Press (February 14, 2006) Paperback: 372 pages

Originally published 1886

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Economist HENRY GEORGE (1839-1897) was, at the height of his popularity in the 1880s and 1890s, considered the third most famous American, behind Mark Twain and Thomas Edison, and his liberal philosophies on taxation, copyrights, poverty issues, and more continue to influence progressive movements today. Here, in this 1886 book, George examines the pressing issues of free trade and protectionism... issues that continue to thwart and challenge our economies today. How do tariffs impact production and revenue? Do high wages necessitate protectionism? What is lacking in arguments for free trade? What are the strengths and weaknesses of both free trade and protectionism? George answers these questions, and others, in this incisive work.

infrastructure and public service, education, and recreation. And all of them attach to land.

The Liberals tend to include along with those socially created values, many values that can be attributed to productions of individuals and corporations. We see this in the personal and corporate income taxes, which make no distinction between the income from land and other monopolies and the income from wages and the return to capital (productive products) that are clearly the rightful property of the workers and the producers of capital.

The solution is to create a common and equal opportunity and assure all people the right to keep what they produce with their labor and their capital (buildings, machines, inventory). By doing that, we can all share equally the socially created values.

These are two inherent rights: (1) An equal right to the bounty of nature and (2) An exclusive right to the product of one's labor. They are considered natural rights because all people feel an inherent right to them.

Ever since the adoption of agriculture and the family as the individual unit within society, we have given control of parcels of land—which now include the unmined minerals and the airwaves—to individuals and corporations. Without exclusive assignment of land, there would be no way for people to keep securely what they produced—a crop, a mineshaft, a house, or a factory. However, if we make the title to land conditional upon the payment of its rental value, the payment of rent can satisfy all other people's equal right to the same parcel of land like the owners of a joint stock company.

Not all land should be assigned to private entities as an exclusive possession. The government should reserve to the people as a whole the waterways, roadways, and much of our recreational lands. However, some land, like farmland, mineral land, and that suited for buildings and other improvements, is much more efficiently used by individuals and corporations with exclusive possession. Again, by collecting the rental value of these lands for public purpose, all other people's equal right to the same parcel of land is satisfied.

It is a modern adaption of the Native American's philosophy that the Earth is a common asset and cannot be private property. It fulfills the philosophy of the Conservatives that what is produced by individuals and corporations belongs to their producers, and it fulfills the philosophy of the Liberals that those values that are socially created belong to all the members of the community and society that created them.

Henry George proposed that the rental value of privately held land should be collected for public purposes. All confiscatory taxes should be abolished. Those businesses that are in their nature monopolies in which there cannot reasonably be competition (such as roads and bridges and the pipes and wires that run along them) should be socialized — taken over and run by the government. And all government granted

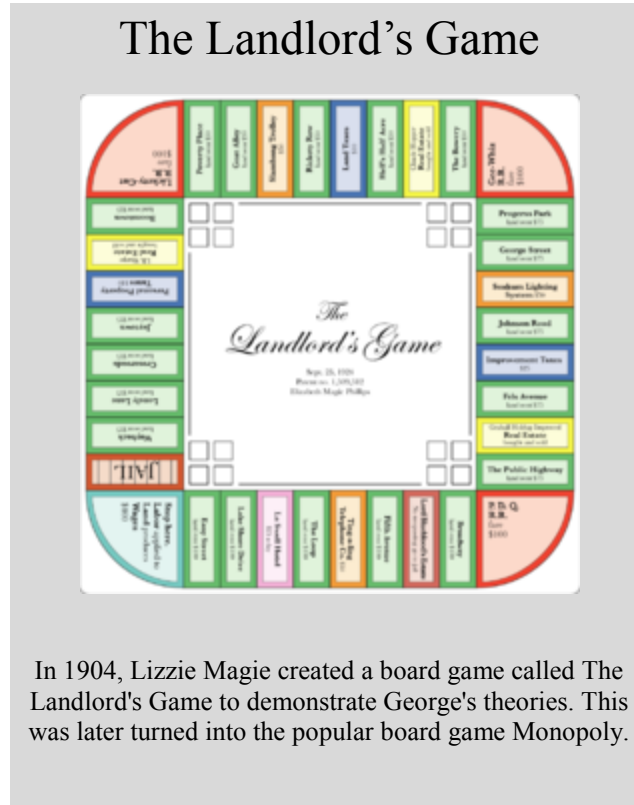
monopolies in which there can be competition (such as taxis or bus companies) should be abolished. George's proposal, now known as the Single Tax, falls only on the rental value of land: It is a concept that limits government and the society that it represents to the values that are socially created.

As the landholders would have to pay rent for the possession of land, they could not afford to hold it idle. They would have to use it or give it to someone who would. Land speculation would end, and the more valuable land in and near cities would be developed to its fullest potential within the limits of health, safety, and the environment. The richest deposits of ore would be worked to their fullest potential first. The most fertile farmland would be used in the most longterm sus-

tainable economic way. Labor and capital would migrate from the less potentially productive sites in the rural hinterland to the much more potentially productive land in and near the cities. The lack of demand for the less potentially productive rural land would eliminate the value of much of it and reestablish a free land alternative where labor and capital could employ itself. Whatever labor and capital could produce on the free land would set the general level of wages and interest (return on capital—buildings, machinery, inventory) on all land.

The free land alternative would not be overwhelmed because those who held the valuable sites would be bidding against each other to hire labor and acquire capital in order to put the sites to their highest and best use which is necessary to maximize their income.

As inventions, innovations, and new technologies increase productivity on the land that is free, wages and interest (return on capital—buildings, machinery, inventory) then increase. And because the general tendency of invention is to increase productivity proportionately more where population is dense the increase in productivity increases the rental value of the superior land. The infrastructure enables denser populations to live and function more efficiently, and it in-



In 1904, Lizzie Magie created a board game called The Landlord's Game to demonstrate George's theories. This was later turned into the popular board game Monopoly.

creases productivity. While it increases productivity on the land that is free, it increases productivity far more on the better land so it increases the value of superior land. Because the Single Tax provides the community and society with a fund that increases with population and the need for public investments, many people say it is a natural source of public revenue.

With every shift from taxing buildings, income, or sales to collecting the rental value of land, it discourages non-use and underuse of valuable land—thereby creating jobs and housing. It can even offset the loss of jobs due to an increase in the legal minimum wage and other interventions that are applied in the short run. It is not clear to what extent other taxes would have to be shifted to the value of land before the country gained full employment. But, when the full rental value is collected from all privately held land throughout the country, there will be an opportunity for all who are willing and able to work. Wages will rise and continue to rise with every new technology. The return to savings and productive capital (buildings, machinery, inventories) will rise because there will be a free alternative place for it to engage in production.

While the rental value of all land will fall as wages and interest (return on capital—buildings, machinery, inventory) rise, the cities and surrounding areas will become more densely populated as land that was unused and under-used (held for speculation) is put to its most profitable use. The larger populations and the absence of slums will increase the rental value of urban land. And, because technology increases productivity more where population is dense, the rental value of land in cities and suburbs will continue to rise.

The rental value of land in metropolitan areas far exceeds the cost and maintenance of the infrastructure and public service. This is the fund to use to care for the sick, aged, and helpless. This is the source to fund Social Security, national healthcare, and national defense. This is the fund to pay for medical and environmental research. We may already have enough cooperation and technology that the rental value of land—were it collected—would fund all the aforementioned expenditures and a basic income guarantee for all the people in the country. This is a leveler that compensates for the natural diversity in the intelligence and physical abilities of people without taking from those who have produced or diminishing the incentive to produce.

To recapitulate, the Single Tax, which is the public collection of the rental value of land, creates an equal and common opportunity. It insures that what individuals and corporations produce belongs to their producers. It insures that the synergistic values that are created by the conscious and subconscious cooperations of the community and society as a whole belong equally to all members of the community and society of which they are a part. That is because the value that results from the synergistic cooperation of the community attaches firmly and inexorably to land.

When the value of land is collected for public purpose,

it eliminates the unearned income that is kept by landholders. Therefore, it eliminates not only the speculative value, which is based on future expectations but the purchase price of land entirely. This is of large benefit to the homeowner or corporation who will not have to borrow or expend large amounts of savings to buy the land. Since it eliminates the purchase price of mineral land, had it been in play when the coal lands were first acquired and put into production, it would create no great loss if carbon emitting fuels are phased out due to pollution and CO2 emissions.

Now, whenever anyone has done a good job of explaining the Single Tax or even a shift from taxing buildings to the value of land in a single city, the reaction of most people is that little voice that says: “If it sounds too good to be true, it almost certainly is.” They often ask: “Do you mean to tell me that in all our universities they couldn’t figure it out that what you are telling me is true? How we could raise wages by shifting our taxes sounds like a passage from *Alice in Wonderland*.”

They haven’t fully grasped the idea that idle land is motivated by its increase in value or that it causes a shortage of housing and jobs because you need some place to work and live and materials because you can’t make something out of nothing. They can’t imagine a free land opportunity like the Homestead Act of the nineteenth century.

Keep in mind: This ain’t no ordinary proposal. We are not only advocating the overthrow of our aristocracy, which includes the people who own the newspapers, the air waves, and our politicians, but we are also saying to the majority of Americans, they must give up the one thing that has gotten them off the treadmill of life.

We are promising that their wages and the return on their savings will increase, that there will be no taxes on income, sales, or their house itself—that they will be far better off with the Single Tax than they are right now. And some people think we just might just be right but few people have any confidence that we are.

What they do know for sure is that because they own a house, no one can ever raise their rent. And the more time that has passed since they got a 30-year fixed rate mortgage, the more they can afford to go out for dinner, take a vacation, send their kids to college, and actually retire when they get to 65 or 70. And, if they can get their real-estate taxes reduced, they see that as a very big plus. While renters are paying 10% and 20% on bank loans and credit cards, the homeowner knows that he can borrow pretty much whatever money he wants for about 3% or 4%.

It is really no wonder the masses don’t come right out and join the Single Tax chorus. Even among those who are sure that Henry George was right, few think that the 1% will ever let the Single Tax become a reality.

Most of us agree, if we don’t stop polluting the air and water, we will have a Third World country; if we don’t stop CO2 emissions the Earth will become uninhabitable; if we don’t prevent nuclear war, there won’t be any other prob-

lems. However, what are the chances that the hungry will worry about pollution, the unemployed about global warming, the homeless, about nuclear war? And yet, can anyone imagine a person who is assured an opportunity to work, own a house, and enjoy a decent life for themselves and their posterity, who wouldn't be concerned with pollution, global warming, and nuclear war? The Single Tax, creates the incentive to use the land within the legal limits of health, safety, and the environment or give it to someone who will. It insures a just distribution to those who work, and those who save and invest in productive endeavors. Therefore, the Single Tax really is the only thing that can save our planet, while creating a just and prosperous world without exploitation and poverty.

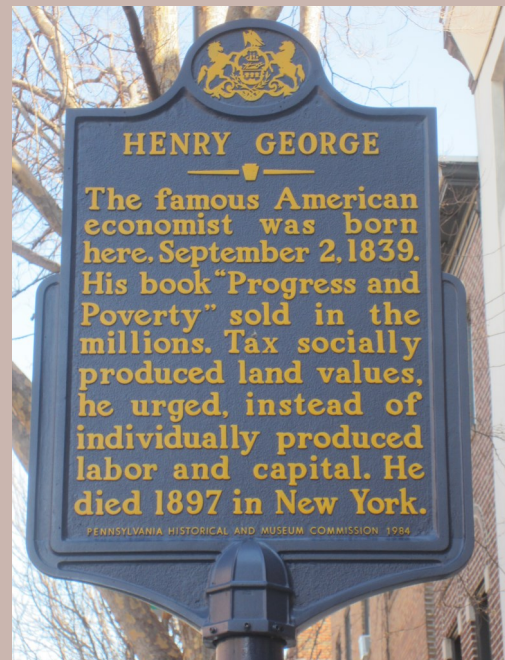
Background on Henry George (1839–1879). Author of the world famous *Progress & Poverty* (1879), *Protection or Free Trade* (1886), and several other books on political economy and social philosophy. He died near the end of his second run for mayor of New York City. Had he lived, his victory was almost certain.

About the author: Mike Curtis is the former director of the Henry George Birthplace , Archive and Historical Research Center (Philadelphia, PA) and the Henry George School (New York City, NY). He taught the principles of political economy based on the works of George for many years.

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The Henry George birthplace in Philadelphia

A historic home located at 413 S. Tenth Street, between Lombard and South, not far from Independence Hall. It was built in 1801, and is a three story brick rowhouse in a late Federal style



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.**



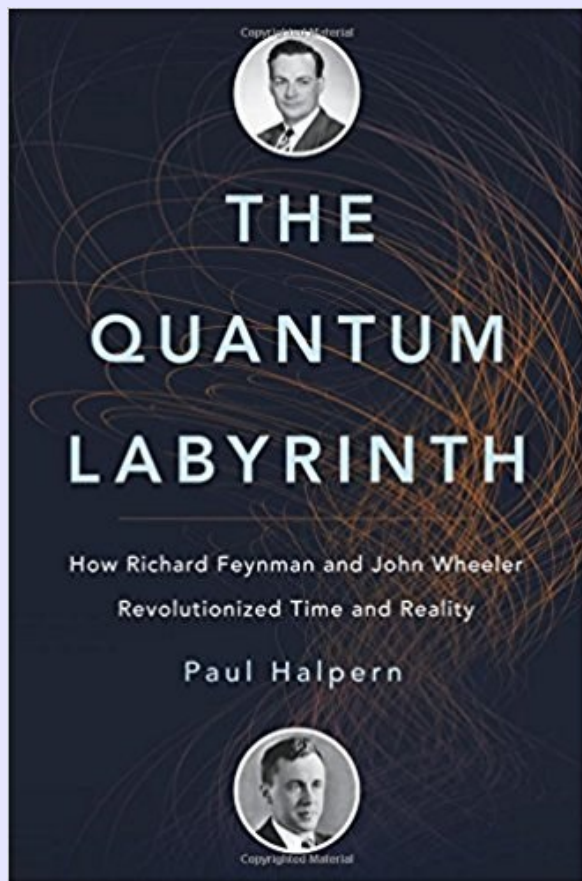
Saturday, January 20, 2018 at 2:00 PM. PhACT Lecture. In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Paul Halpern, Ph.D., a physicist and cosmologist, will discuss his new book:

The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality

In 1939, Richard Feynman, a brilliant graduate of MIT, arrived in John Wheeler's Princeton office to report for duty as his teaching assistant. A lifelong friendship and enormously productive collaboration was born, despite sharp differences in personality. The soft-spoken Wheeler, though conservative in appearance, was a raging nonconformist full of wild ideas about the universe. The boisterous Feynman was a cautious physicist who believed only what could be tested. Yet they were complementary spirits. Physicist Paul Halpern will discuss the little-known story of their friendship, which is the subject of his new book *The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality* (Basic Books). Together, Feynman and Wheeler rethought the nature of time and reality that laid vital groundwork for late-twentieth-century breakthroughs in particle physics. Their friendship and collaboration enabled Feynman to show how quantum reality is a combination of alternative, contradictory possibilities, and inspired Wheeler to develop his landmark concept of wormholes, portals to the future and past.

**The hardest thing to understand in the world is
the income tax. ~ Albert Einstein**



The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality By Paul Halpern, Ph.D.

**Publisher: Basic Books; 1 edition (October 17, 2017)
Hardcover: 336 pages
ISBN-10: 0465097588 ISBN-13: 978-0465097586**

The story of the unlikely friendship between the two physicists who fundamentally recast the notion of time and history

In 1939, Richard Feynman, a brilliant graduate of MIT, arrived in John Wheeler's Princeton office to report for duty as his teaching assistant. A lifelong friendship and enormously productive collaboration was born, despite sharp differences in personality. The soft-spoken Wheeler, though conservative in appearance, was a raging nonconformist full of wild ideas about the universe. The boisterous Feynman was a cautious physicist who believed only what could be tested. Yet they were complementary spirits. Their collaboration led to a complete rethinking of the nature of time and reality. It enabled Feynman to show how quantum reality is a combination of alternative, contradictory possibilities, and inspired Wheeler to develop his

landmark concept of wormholes, portals to the future and past. Together, Feynman and Wheeler made sure that quantum physics would never be the same again.

Saturday, February 17, 2018 at 2:00 PM. PhACT Lecture.

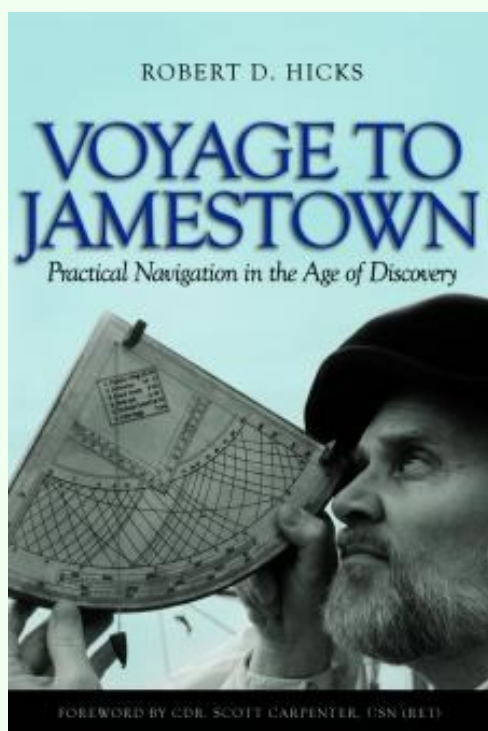
In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Robert Hicks, Ph.D., curator of the Mutter Museum at the College of Physicians of Philadelphia, will discuss:

Vaccination Pure and Spurious: The Confederate Vaccination Crisis of the Civil War

The Confederate southern states experienced several smallpox epidemics during the American Civil War, blaming the disease on the Union northern states. Confederate doctors responded by vaccinating soldiers but then discovered that some vaccinations were ineffective (“spurious”) and instead spread other diseases, particularly syphilis. This presentation considers how the Confederacy managed vaccinations and tried to solve the numerous spurious cases. His illustrated tale includes the deliberate infection of children on plantations as a source of vaccine, and allegations of vaccination poisoning in the conflict’s only war crimes trial. In a surprising convergence of history, a museum collection, and current disease research, a detective story concludes the presentation!

Robert D. Hicks, PhD is the director of the Mütter Museum and Historical Medical Library of The College of Physicians of Philadelphia. He also directs the F. C. Wood Institute . Formerly, he supervised exhibits, collections, and educational outreach at the Chemical Heritage Foundation in Philadelphia. He has worked with museum-based education and exhibits for over three decades, primarily as a consultant to historic sites and museums. This work led Robert to obtain a doctorate in maritime history from the University of Exeter, United Kingdom. Concurrent with the museum consulting, Robert worked for the Commonwealth of Virginia as a senior program manager in criminal justice, providing managerial assistance throughout the state. Earlier, he performed criminal justice work in Arizona, and obtained B.A. and M.A. degrees in anthropology and archaeology at the University of Arizona. He also served as a naval officer with the U.S. Naval Security Group. His most recent book is *Voyage to Jamestown: Practical Navigation in the Age of Discovery* (U.S. Naval Institute Press, 2011).



VOYAGE TO JAMESTOWN

Practical Navigation in the Age of Discovery

By Robert D. Hicks, Foreword by CDR Scott Carpenter, USN (Ret.)

ISBN/SKU: 9781591143765 Hardcover 256 pages
Published: October 2011

Voyage to Jamestown explores how sea navigation was accomplished during the era of discovery. Navigational methods and tools are presented within the setting of their use during a sea voyage of the period. While this voyage features a fictional crew and ship, it is carefully reconstructed from actual events, circumstances, narratives, and historical figures, which demonstrates the challenges of marine navigation within the cultural experience of people who actually traveled the oceans centuries ago. The fictional voyage follows the merchant galleon *Guyft* from Bristol, England, to Virginia in 1611, captained by Tristram Hame. With this narrative technique, the reader can absorb seafaring and navigation as practiced in the seventeenth century as if they were on board the ship. Navigational theory, methods, and instrumentation of the era are all engagingly presented within economic, political, scientific, and religious contexts to portray how the early navigator experienced his world.

Robert D. Hicks is currently Director, Mütter Museum/Historical Medical Library in Philadelphia, PA. He was PhACT's speaker October 2011.

Saturday, March 17, 2018 at 2:00 PM. PhACT Lecture.

Topic to be determined

Saturday, April 21, 2018 at 2:00 PM. PhACT Lecture.

Our speaker will be Rob Brotherton. His topic will be:

“Hip Hop and the Illuminati”:

Saturday, May 19, 2018 PhACT Expedition.

At 2:00 PM at Laurel Hill Cemetery at 3822 Ridge Avenue in Philadelphia.

In 1837 necessity drove John Jay Smith to create a new kind of cemetery in Philadelphia. Not that there weren't already cemeteries. There were more than seventy of them in what we now call Center City. They stood in the way of progress and they were absolutely sure to prove tiny and inadequate for the city's future population.

So Smith bought acres a few miles north of the city in an area that he expected to remain forever rural. He hired John Notman—later to be a famous architect but then just a young immigrant from Scotland—to lay out what the Victorians called a picturesque landscape. It would have gently curving paths, groves of trees, and splendid views of the Schuylkill. Later this rural cemetery would provide one of the important models for New York's Central Park.



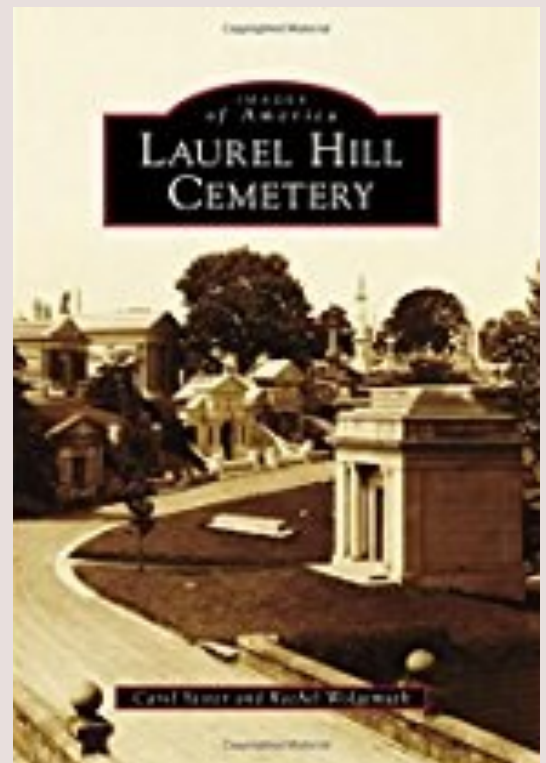
Laurel Hill Cemetery (Images of America) by Carol Yaster and Rachel Wolgemuth

Publisher: Arcadia Publishing (August 7, 2017)

Paperback: 128 pages

ISBN-10: 1467126551 ISBN-13: 978-1467126557

Established in 1836, Philadelphia's Laurel Hill Cemetery was one of the earliest rural cemeteries in America. The picturesque views and outstanding horticulture, along with sculptures and monuments designed by notable artists and architects—like Alexander Milne Calder, Alexander Stirling Calder, Harriet Frishmuth, John Notman, and Thomas Ustick Walter—attracted thousands of visitors. Laurel Hill became the desired place of burial for Philadelphia's elite and the final resting place for those with last names like Widener, Wharton, Meade, and Elkins. The cemetery's design was much admired and widely imitated, both locally and nationally. While the 20th century ushered in a steep decline for Laurel Hill, the establishment of a friends group in 1978 and the cemetery's designation as a National Historic Landmark in 1998 signaled a transformation for the cemetery. Laurel Hill entered a new century as a revitalized and relevant institution. Once again, the cemetery is regarded as an important part of the community, a worthy destination for visitors, and a place to share in the stories of the men and women whose lives shaped both Philadelphia and the nation



A Quaker, Smith may not have realized that his beloved trees would soon be supplemented by elaborate monuments of stone. And I mean elaborate: a model of the doorway to Moyamensing Prison for a prominent prison reformer, a mausoleum carved into a rocky hillside for an Arctic explorer, and a mother with children in her arms for a woman who died in childbirth.

We will see Victorian monuments and we will see such striking modern ones as a huge candle to light the darkness and a giant microphone for a beloved sportscaster. And we will stop at the grave of the Philadelphia photographer who, way back in 1839, took the first selfie.



Date: Saturday May 19, 2018

Meeting Point: The Gatehouse at 3822 Ridge Avenue

Time: 2:00 P.M.

Suggested Contribution: \$15 for historic preservation of the monuments.

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No, Bob... Critical thinking does not simply consist in replacing common knowledge by any bullshit people put up on the internet.

Cartoon by Benoît Leblanc
<http://peopleinwhitecoats.blogspot.ca/>
Used by Permission

Letters to the Editor

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

Editor: I enjoyed Don Nigroni's cover article (Oct./Nov./Dec. 2017) on the GR 1 runestone. I haven't read Wahlgren's book, but I'm not convinced by the suggested interpretation of the final six runes.

There are more than a dozen recognized futharks (the term for the runic version of our alphabet, based on its first six characters). Apparently because the National Museum of Denmark has the runestone, we seem to be using "the younger Danish futhark." The rune that resembles a pitchfork (facing up) is "m" but the one facing down is "R." The zig-zag (facing either way) stands for "s" (later infamously adopted for the Nazi SS collar pin). I find no rune that resembles the "vibrating string" center portion of the 3rd, 4th, and 5th mystery runes, but it could be "gg" shown in MS 17 (St. John's College, Oxford), which is pointier on the sides and has a longer center stem.

Neither Nigroni's interpretation or the one on p. 2 (the museum's translation, in a photo of a placard) seems to suggest that the message has any magical context; it appears purely commemorative.

Bind runes? I find no reference to such a thing as Nigroni describes it. To bind (the verb) is very similar to the Old

Norse word "binda," which is generally equivalent to the several definitions we use for the English word. There is no reference in any of my runic books to any magical connotation for the word, or these specific runes (but, see below).

I suggest another, purely aesthetic explanation: The person who carved GR 1 finished his message with half of a third line, which would look a bit incomplete. Perhaps he merely filled in the leftover space of the third line with symmetrical symbols that resemble runes, but actually have no runic meaning.

Scandinavians were largely illiterate during the period when runic writing was in use. The fact that Rogation Day is mentioned in the text (to specify the date of carving) indicates that the carver was at least partially Christianized, placing the stone solidly in the later portion of the Viking era, and he was clearly literate enough to create the message.

Pre-literate Vikings held that the runes were themselves magical. Why not, since they were able to convey messages without speech? That must seem magical to non-readers. Odin himself is usually depicted wearing an eye-patch, because he once sacrificed one of his eyes in order to gain knowledge of runic magic! The entire futhark, spelled out on a building or movable property, was thought to offer protection and bring good luck. The semi-literate could also benefit, by merely scratching out whatever runes they knew (and most Norsemen knew at least the first six characters, which is why we now call it the futhark, and not simply the "fu").

Correspondence with the Editor is not like tooth extraction!

Your opinion counts and we would like to hear from you. Phactum is an open forum on matters of science and technology, anti-science and anti-technology, history and economics, mythology and legend, and very importantly science based medicine and quackery. Varying viewpoints are encouraged. If there is something on your mind feel free to write a letter to the editor or an original article to be published in Phactum. There are few restrictions of topic but we do wish to avoid harsh commentary on matters of religion except perhaps where religion contradicts science. Poets, with license, are welcome. We do not engage in partisan politics. And, please, no Gaga Gossip. Book and movie reviews are very welcome and PhACT associates who are authors with new books are more than welcome to advertise (for free) in Phactum.



Send submissions to the Phactum Editor at phactpublicity@aol.com

However, when Christianity arrived in any culture, it always worked to replace any native writings, traditions, and especially magical rituals; the use of runes in the north was swept away as quickly as the priests could manage it.

In so-called magic, there are rituals to "bind" others (human or spiritual) from saying or doing something undesirable. Usually in spell form, a binding has the spiritual effect of physical bonds. Such rituals from Viking culture are now lost. One of our best resources for such "arts" is the fiction of J.R.R. Tolkien, who was himself an expert interpreter of Scandinavian runes.

Paul Schlueter III
Dallas, PA

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Various Ruminations of Woo Woo and Real Science and some Gossip

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

What Is A Scientist?

Here is a question: What is a scientist?

When we think of scientists I suspect that most of us, me included, think of a professor wearing a lab coat doing something "scientific" like looking through a telescope or mixing chemicals. It seems to me though that there is a lot more to it than that.

My own view is that a scientist is one who will investigate an idea or situation, will look for facts, will pursue the idea if facts are supportive, and will refrain from ignoring facts that argue against the thesis, will refine the idea and

repeat the process as often as needed to prove or disprove the hypothesis. Is that not basically in a nutshell "The Scientific Method"? I think it is.

So who can be a scientist? Must a scientist be a highly trained individual such as a chemist or astronomer? Or, might a scientist include more ordinary people such as farmers and detectives who must evaluate the real life situations at hand and with proceed available facts and logic to successfully plant crops and catch burglars?

PhACT does dwell heavily on science and scientists, but most of us who attend science discussions are not highly trained "scientists", even fewer are highly trained specialists in whatever the topic of that day might be. How many of us who will attend Professor Halpern's lecture are trained physicists/cosmologists? How many attendees at Professor Mann's brilliant lecture were expert in matters of anthropology? But does it really matter? Attendees at PhACT lectures do have an interest in scientific understanding and perhaps that in some way qualifies them as a "scientist".

I think these are all good questions and would like to hear the thoughts of Phactum readers on this philosophical matter. Please send letters or articles to the Editor to print in Phactum whether they be in agreement or contradiction.

phactpublicity@aol.com

Margaretha Geertruida MacLeod (née Zelle), R.I.P.

October 15, 2017 was the 100th anniversary of the execution of Margaretha Geertruida MacLeod (nee Zelle), otherwise known as Mata Hari, said to have been a spy for the Germans and also for the French during World War 1.

Mata Hari, born August 7, 1876 at Leeuwarden, Netherlands, was the daughter of a bankrupt hat merchant. In 1895, Mata Hari, at age 19, married a British military officer named Rudolf MacLeod. She had two children, a son who died at age 4 in 1899, and a daughter. The marriage was a dismal one and MacLeod who was an abusive alcoholic ran off with their daughter who is said to have died of syphilis at age 21.

Early in the 1900's, now without children, Mata Hari entered the world of exotic dancing, and began to have a series of lovers among diplomats, military officials, and other dignitaries. After World War 1 commenced she was

**"Puritanism: The haunting fear that
someone, somewhere, may be happy."
~ H. L. Mencken (1880-1956)**





Mata Hari ... circa 1907

enticed by French agents to spy upon the Germans. Not long thereafter she was recruited by the Germans to spy upon the French.

Mata Hari was a citizen of neutral Holland and as such was able to cross international borders with relative ease, a splendid qualification for a spy. She was not an effective spy for either of her employers, reporting mainly the squalid affairs and seductions of government officials rather than military intelligence. Eventually a German officer exposed her to the French. Mata Hari was arrested February 13, 1917, was tried in July, and was executed by firing squad in Vincennes on October 15, 1917.

Court proceedings were



Greta Garbo portraying Mata Hari (1931)

sealed by French officials who scheduled eventual release of trial documents 100 years hence. Much of the story remains a mystery.

In 1931 a fictionalized and romanticized version of Mata Hari's story starring Greta Garbo in the title role was produced by MGM in Hollywood. This was Garbo's most successful film and was the biggest hit of 1931 yielding the producers over one million dollars of box office receipts.

Dr. Stephen Barrett Reports in Consumer Health Digest

▶▶ Another infection due to raw milk reported (November 19, 2017)

The New Jersey Department of Health has ordered Udder Milk, a home delivery company, to stop selling unpasteurized milk in New Jersey. <http://www.nj.gov/health/news/2017/approved/20171113c.shtml>

State and federal officials are investigating to determine from which farms Udder Milk acquired its raw milk, after a North Jersey woman became ill with a rare bacterial infection. Unpasteurized milk may contain dangerous bacteria and is illegal to sell in interstate commerce and several states. The current concern arose after a North Jersey woman was diagnosed with brucellosis acquired from consuming raw milk. People who have consumed raw milk products that are potentially contaminated with *Brucella* organisms are at high risk for brucellosis infection. Symptoms of brucellosis can occur anytime from 5 days to 6 months after initial exposure to *Brucella* germs. Symptoms can also disappear for weeks or months only to return at a later date. Initial symptoms may include fever, sweats, malaise, anorexia, headache, fatigue, and muscle and joint pain. Severe infections of the central nervous system or endocarditis can occur. In the chronic forms of brucellosis (lasting 6 weeks or longer), symptoms include recurrent fever, arthritis, and testicular swelling. From 1993 through 2012, the U.S. Centers for Disease Control and Prevention received reports of 127 outbreaks of infections (of all types) linked to raw milk consumption that resulted in 1,909 cases of illnesses and 144 hospitalizations.

ANYONE, ANYWHERE—You can easily learn to be a doctor; we give you easy lessons by mail and give you a beautiful diploma. We teach you to treat all kinds of sickness. You can open a doctor's office in your own home and earn \$5,000 yearly. For particulars, Address UNIVERSITY, 4248 COTTAGE GROVE, CHICAGO, ILL.

Get your beautiful diploma and start making money!
A rather dubious advertisement from the National Police Gazette (New York), 11 February 1922

►► **Review contrasts veterinary drugs and homeopathic "alternatives" (November 19, 2017)**

The British Veterinary Association's journal has published two articles that place homeopathy in historical and scientific perspective. Although the articles concern veterinary practices, their conclusions are equally relevant to human drugs. The first article notes that, "For many drugs the mechanism of action is proven, and for most drugs without proven mechanisms of action, scientifically plausible mechanisms exist." [Lees P and others. Comparison of veterinary drugs and veterinary homeopathy: Part 1. Veterinary Record, Aug 12, 2017 <http://veterinaryrecord.bmj.com/content/vetrec/181/7/170.full.pdf>]

In contrast, the second article notes that "Homeopathy . . . is top down and faith-based; governed by arbitrary laws, invented by the founder, Hahnemann, which are immutable. As such, homeopathy is not just unscientific, it is a genuinely mystical belief system." [Lees P and others. Comparison of veterinary drugs and veterinary homeopathy: Part 2. Veterinary Record, Aug 19/26, 2017

<http://veterinaryrecord.bmj.com/content/vetrec/181/8/198.full.pdf>]

►► **Quackwatch featured on dating advice site (December 10, 2017)**

DatingAdvice has posted a feature article about Quackwatch and Der. Stephen Barrett. [Brooks A. Quackwatch explains how health misinformation can affect your life & relationships. DatingAdvice.com, December 11, 2017 <http://www.datingadvice.com/for-men/quackwatch-explains-how-health-misinformation-can-affect-relationships>] In addition to providing tips on how to spot and avoid quackery, Dr. Barrett notes that big difference in health beliefs can wreck relationships and therefore learning a prospective partner's beliefs is important.'

►► **FDA proposes new homeopathic product regulations (December 24, 2017)**

The U.S. Food and Drug Administration has proposed what it calls "risk-based guidelines" that give enforcement priority to homeopathic products with the greatest potential risk to patients. [FDA proposes new, risk-based enforcement priorities to protect consumers from potentially harmful, unproven homeopathic drugs. FDA news release, Dec 18, 2017 <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm589243.htm>] The FDA intends to focus on: products with reported safety concerns products that contain or claim to contain ingredients associated with potentially significant safety concerns, products for routes of administration other than oral and topical products intended for the prevention or treatment of serious and/or life-threatening diseases and conditions, products for vulnerable populations, products that do not meet legally required standards of quality, strength, or purity.

Although homeopathic products have no proven effec-

tiveness and their theoretical basis is senseless, a complete ban is not politically feasible. [Barrett S. Homeopathy: The ultimate fake. Quackwatch, Aug 25, 2016

<https://www.quackwatch.org/01QuackeryRelatedTopics/homeo.html>] However, the FDA can easily limit their marketing to single-ingredient products that strictly comply with the Homeopathic Pharmacopeia. No health claims should be permitted for homeopathic products unless they are approved through the FDA's standard drug approval process. The only statements that should be permitted in labeling or advertising are the chemical name, the dilution, and that fact that the product is homeopathic. Products consistent with the Pharmacopeia could still be marketed, so consumers who want homeopathic products could still obtain them. But unapproved health claims—including implied claims in product names—should be banned. If you agree with this suggestion, please read Dr. Barrett's full explanation and post a comment in your own words to the FDA comments page.

Dr. Barrett's weekly newsletter, *Consumer Health Digest*, is free and available to all who wish to subscribe. To subscribe send a blank email to send a blank message to

chd-subscribe@lists.quackwatch.org

Dr. Barrett's main website is: www.quackwatch.org

Tiktaalik Is Not A Missing Link!

See this Youtube Video to learn from Dr. Dino, a.k.a. Kent Hovind, an evangelist and Young Earth Creationist, why this is so:

<https://www.youtube.com/watch?v=557Dkz5BJA0>

In this 30 minute video Hovind chats various inconsequential and begins to discuss tiktaalik at about 6:00. He is apparently amused that this Devonian era fossil is viewed as a transitional species by scientists. At about 9:30 Dr. Ted Daeschler is quoted and his ideas belittled at some considerable length. Dr. Daeschler is a co-discover of tiktaalik, works for the Academy of Natural Sciences at Drexel University, and has twice been a PhACT speaker.



Hovind goes on to discuss fossilized lobe finned fish from the Devonian era and describes them as a lie since such fish still exist in the Indian Ocean.

At 13:15 Hovind puts forth a rather balmy explanation

of the evolution of eating utensils as if evolution of man made commodities bears relevant similarity to biological evolution.

At 16:00 objections to tiktaalik are listed including the fact, according to Hovind, that we can not prove that tiktaalik had ever reproduced. Furthermore, all animals on Earth can only reproduce according to their own kind. Then at about 16:45 Hovind launches into Bible study and the anti-evolution rant has ended.

We have not heard much about Kent Hovind for a good number of years, mainly because he was in jail. The Pensacola News Journal reported on July 14, 2006 that "Evangelist Kent Hovind is arrested on 58 federal charges, including failing to pay \$473,818 in employee-related taxes and making threats against investigators.

Hovind, who often calls himself Dr. Dino, "has been sparring with the IRS for at least 17 years on his claims that he is employed by God, receives no income, has no expenses and owns no property."

On July 10, 2015 the Pensacola News Journal reported "Local evangelist Kent Hovind has been released from federal prison and is back in Pensacola.

Hovind served about nine years of a 10-year prison sentence after being convicted of failing to withhold employee income taxes and "structuring" bank withdrawals to avoid reporting requirements."

After release from prison Hovind did have some legal victories in that other federal charges were dropped but otherwise things did not fare so well. His wife, Jo, who also went to prison, filed for divorce and he has been disowned by his son, Eric, also a Young Earth Creationist preacher. Financially Hovind is in dismal condition.

Nonetheless, Hovind now has a considerable presence on the internet with many rather lengthy videos on Youtube

dealing with the Creationist view of Evolution and other Bible study topics. A video is produced daily.

Hovind and his ministry had operated a creation based theme park called Dinosaur Adventure Land near Pensacola, Florida. That property is long gone but he and followers are soldering on, now forming a new Dinosaur Adventure Land in Lenox, Alabama, population 37, not far north of Pensacola. I can hardly wait to see this spectacle.

Gambling Addiction

♠♣♥♦ - **New Zealand** -

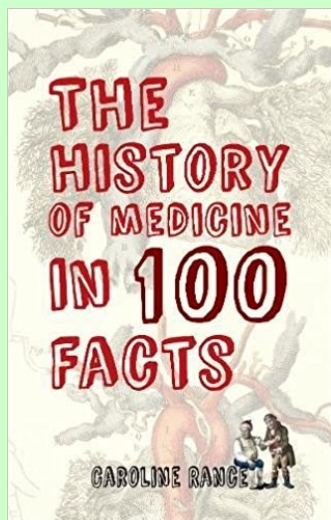
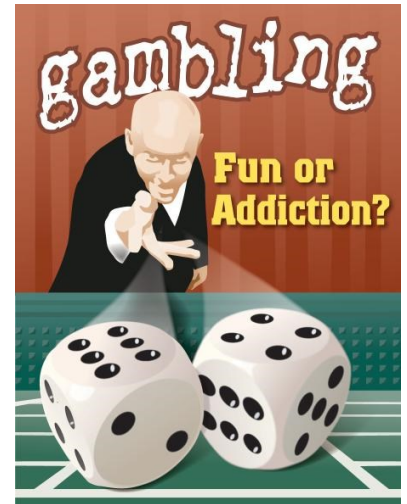
Opinion: Gambling addiction will not go away

Some will tell you gambling is one of the scourges of society - and many of us know at least one problem gambler. Sadly, I have known someone who almost lost their home through a pokie addiction - and would have if a family member had not helped them out. Statistics show that fewer than 10 per cent of people with a gambling problem seek professional help, while 25 per cent say part of the reason they don't look for help is because of shame and embarrassment.

http://www.nzherald.co.nz/wanganui-chronicle/opinion/news/article.cfm?c_id=1503423&objectid=11932069

♠♣♥♦ **USA - Muncie, Indiana**- Ex-banker gets 5 years in theft case

The former assistant manager of a Muncie bank branch who



The History of Medicine in 100 Facts by Caroline Rance

Publisher: Amberley Publishing; 1 edition (December 15, 2015)

Paperback: 192 pages

ISBN-10: 1445650037 ISBN-13: 978-1445650036

The history of medicine is a vast subject, encompassing the whole of humanity in every region of the globe. For millennia, our ancestors have sought to combat disease, relieve pain and postpone the Grim Reaper's inevitable victory, doing so with a fortitude and humour that makes their experiences resonate with us today. In this book packed full of facts from medicine's long and often shocking past, Caroline Rance gives concise introductions to some of the more well-known (and not-so-well-known) episodes, dispelling a few myths and celebrating a few neglected figures along the way.

About the Author: Caroline Rance runs the popular history of medicine website www.thequackdoctor.com and has an MA in Medicine, Science and Society. She has written a historical novel, Kill-Grief, and a non-fiction book on Victorian proprietary medicines, The Quack Doctor: Historical Remedies For All Your Ills. She has also compiled a pocket trivia gift book, What the Apothecary Ordered, for Old House Books.

stole depositors' funds was sentenced Monday to five years in prison. Diane Renee Bizzell, 65, had pleaded guilty in August to 14 felony charges - seven counts of theft, six counts of identity deception and one count of check fraud. The Muncie woman testified Monday the thefts began after she "started going to Hoosier Park and got caught up in the slot machines." "I'm truly sorry for what I did, to the bank and the customers," Bizzell said. "I just got caught up in that durned gambling." She insisted she was no longer addicted to gambling, although she had not received any related counseling or treatment.

<http://www.thestarpress.com/story/news/crime/2017/10/09/ex-banker-gets-5-years-theft-case/746953001/>

♠♣♥♦ **United Kingdom - 25,000 children in Britain are problem gamblers, report finds -**

About 25,000 children between 11 and 16 are problem gamblers, with many learning to bet via computer games and social media, according to a report that has prompted warnings that the UK is "sleepwalking into a future public health storm". In its annual survey of youth gambling, the industry regulator the Gambling Commission voiced fears that children were gambling in a "consequence-free environment", including through so-called "skins" betting on video games. Its concerns prompted Labour, which deregulated the gambling industry in 2005 but has changed its stance, to brand existing legislation "woefully out of date".

<https://www.theguardian.com/society/2017/dec/12/children-britain-problem-gamblers-report>

♠♣♥♦ **Venezuela - Venezuelan Crisis Causes Boom in Gambling**

Simply put, the economic crisis in Venezuela is forcing residents to live a life of desperation and deprivation. While many Venezuelans are wondering where their next meal will come from, they are also wondering which one of 38 different animals to choose next in the nation's latest gambling craze, Los Animalitos. The game is a simple draw game sold at lottery agencies and whose results are revealed online hourly throughout the day. But the promise of a payout 30 times your original bet-and many times the monthly minimum wage-has left many risking what little they have in hopes of some good fortune. Gambling has long been popular in Venezuela, so it seems natural that in a recession, Venezuelans would make a beeline to a game that could potentially pull them out of the poverty rat race.

<https://www.casino.org/blog/venezuelan-crisis-causes-boom-in-gambling/>

♠♣♥♦ **USA - Pennsylvania - Ex-Lawmaker Gets 18 Months of House Arrest in Gambling Case**

A former Pennsylvania lawmaker has been sentenced to 18 months of house arrest for his role in an illegal gambling machine operation. The Pittsburgh Post-Gazette reports that Marc Gergely was also ordered Monday to spend three years

on probation after completing the sentence. The seven-term Democratic representative pleaded guilty in Allegheny County to misdemeanor conspiracy and campaign finance violation counts. Gergely was accused of aiding an illegal video gambling operation that had some 335 machines at 70 restaurants, bars, bowling alleys and other locations.

Prosecutors alleged that Gergely used his position to assuage the fears of business owners who were leery of putting gambling machines in their establishments.

<https://www.usnews.com/news/best-states/pennsylvania/articles/2017-12-11/ex-lawmaker-gets-18-months-of-house-arrest-in-gambling-case>



♠♣♥♦ **USA - West Virginia - USA - Problem Gamblers program cautions parents on pay-to-win features in video games**

A West Virginia problem-gambling program is warning parents about potential dangers associated with certain features in video games. As Christmas lists are oftentimes filled with video games and tech devices, the Problem Gamblers Help Network of West Virginia, which operates West Virginia's 1-800-GAMBLER program, urges parents to be aware this holiday season about "pay to win" features. Program Director Jennifer Davis-Walton says many popular video games, such as Counter-Strike: Global Offensive, Overwatch, and Star Wars Battlefront, incorporate these features. "Loot boxes" are in-app purchases that offer a chance, though not a guarantee, to purchase a sought-after item. These items are presented as a mystery box, which means the player may purchase several boxes and still not receive their desired item. Davis-Walton says that the intermittent reward system used is similar to the way slot machines are programmed, designed to maximize continuous play.

http://www.register-herald.com/news/problem-gamblers-program-cautions-parents-on-pay-to-win-features/article_2a000a06-7706-59d7-8cc9-fa8ecd5fd404.html

Meeting Reports - September 2017

Reported by Jordan Chapman and Steven Miller. Physics students of Dr. David Cattell at Community College of Philadelphia.

Kenneth Silber, a science and politics journalist, discussed *Science and Politics in a Post-Truth' Era.* Saturday, September 16, 2017

Reported by Steven Miller

The theme for the 16 September 2017 PhACT meeting was “The Political Climate for Science and Skepticism”, and as the name suggests, topics included distrust for science, differences in political demographics and their trust for science, and a path forward for the scientists among us. The speaker was Mr. Ken Silber, a fact-checker and writer for various publications, as well as a self-professed former RINO, now independent (and Hillary Clinton voter in 2017). As a fact checker Mr. Silber has special interest in the area where science and politics mesh, especially in the very weird zone we seem to find ourselves in quite often in 2017, where the scientific community agrees on a statement (backed up by facts), but one side or both on the political spectrum distrusts the position. While it seems trivial to address skepticism one side or another of the political spectrum, this is especially important, especially when you’re talking about something like climate change, the depletion of the ozone layer, elements of a person’s life which may lead to cancer, etc.

Mr. Silber started his presentation by telling a little bit about himself. He remarked that in the past he called himself a RINO (Republican in Name Only), but that now he is an independent, and in 2016 he voted for Hillary Clinton. These things added some legitimacy to the statements he was making because when somebody starts talking about politics it’s usually helpful to know where they stand. If Mr. Silber is truly an independent it would make his positions less biased (in theory). Mr. Silber went through a number of slides which showed line graphs of things like “Trust in Science” and “Trust in Colleges”, both of which were on a downward trajectory in recent years. I wondered to myself (and then aloud later in the form of a question) if these trends were cyclical, because Mr. Silber’s data only covered the last 10 (or so) years. I

In addition to this I noticed 2 interesting trends:

In DeWitt's Footsteps: Seeing History on the Erie Canal By Kenneth Silber

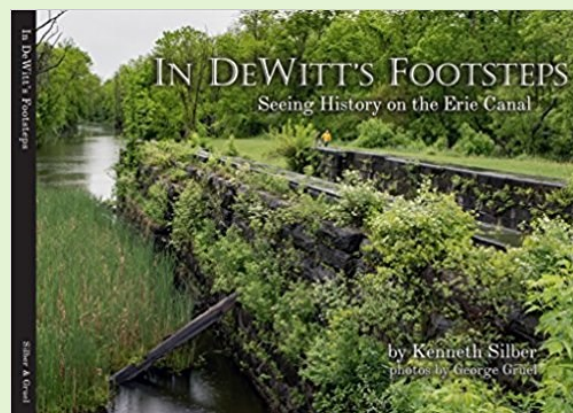
Publisher: Kenneth Silber; 1st edition (September 1, 2017)

Hardcover: 68 pages

ISBN-10: 0692902791 ISBN-13: 978-0692902790

In the early 19th century, DeWitt Clinton, governor of New York, championed and oversaw the construction of the Erie Canal, which linked the Eastern Seaboard to the Great Lakes and thus helped secure

a future for the United States as a dynamic, continent-wide nation. Two centuries later, DeWitt Clinton descendants join in an exploration of their notable ancestor’s legacy in a book that intertwines national and family history and a photographic journey along the canal’s historic and modern routes. Features photos by George Gruel and hand-drawn maps by C. Brooke Silber. Autographed by the author.



- ◆ Republicans on the far right seem to distrust science more than democrats
- ◆ Democrats on the far left seem to believe in a lot of things that science would say don't exist
- ◆ Moderates on both sides seem pretty reasonable
- ◆ (note: I remember thinking to myself "I wonder if distrusting science is any more damaging than believing in something that science can say probably doesn't exist, like God, Spirits, etc...")

Mr. Silber then went on to give examples of things that people believed which were not scientifically founded, I'm assuming to contrast the things that people don't believe that science has found enough reason to generally agree on their existence (like climate change, global warming, vaccines not causing autism, etc). At the end of his presentation Mr. Silber gave a summary, in which he stated a few things, they were as follows (paraphrasing and perhaps incomplete):

- ◆ The current administration is more anti-science than any other administration in history
- ◆ Very likely many scientists will need to be more political than in the past (he used the words "neutrality" and "aloofness" as the alternatives to politicization)
- ◆ New Issues will arise (genetic manipulation, AI, etc.)
- ◆ US Science leadership is at stake, states that we are at the forefront of science and technology, that we could lose that position should leadership not have interest or trust in science.

While I agreed with a lot of what Mr. Silber had to say, I had some concerns with a few of his final points. My first issue stemmed from his assertion that scientists will need to be more political, and the issue I have with it is one of optics and 2nd and 3rd order effects. Upon wrapping up Mr. Silber opened up a question and answer session, and my first question was essentially "If scientists become more political, will that not just aggravate the problem of distrust in science?". Mr. Silber's response was that it would, but that he saw no other way to proceed. While it's unfortunate that the current administration has little trust in scientific findings I worry about a couple things when I think about scientists becoming politicized. The first is that by becoming outwardly political (at all), those from the other side of the political spectrum will have increased reason to be distrusting in science... Even if their distrust is unfounded in fact, the optics of politicized scientists will call into question the motivation and methods of their findings. Secondly, a real concern that has nothing to do with optics, is that by becoming political, scientists are opening the door to potentially tainting scientific results by aligning with a specific political agenda. I think Mr. Silber is on to something by saying that scientists need to not be "aloof", but I think that saying they shouldn't be "neutral" is dangerous. Science is intentionally non-political and extraordinarily neutral, and it should be if not only for the reason of protecting its reputation.

I agreed with Mr. Silber on many things, mainly the fact that the current administration's distrust for science and openly contentious relationship with the scientific community is despicable. I also agree that there seems to be some correlation between a certain side of the political spectrum and distrusting science. Where Mr. Silber and I part ways is on the path forward and what we'd hope to see happen. While I would like to see the scientific community come out and more outwardly support and fight for the acceptance of their findings, I would like to see that done as neutrally as possible.

Professor Alan Mann, an anthropologist, discussed

The Anthropology of Food

Saturday, October 21, 2017

Reported by Jordan Chapman

Dr. Alan Mann's presentation on the evolution of the human diet was a very thought-provoking look into food. Over the last few decades several popular documentaries such as Food Inc. have given the public sometimes grueling looks into what we eat and where it comes from. However, I think Dr. Mann's approach, while certainly more scientific is an even more eye-opening account into how food is thought of in today's society. He started off by first defining food as a substance that provides nutritional value and helps to sustain a person and a diet is established as the total amount of nutrition and substance a person receives. Where I think he really starts to make his point is when he defines the difference between cultural cuisine and personal cuisine. I found this to be one of the more interesting aspects of the presentation. Dr. Mann's explanation here seems pretty simple, on the other hand I don't believe I've ever heard food's role in society be explained this way. Based off these definitions he begins to make many strong points for and especially against everyday "foods" that I'm sure many people never think twice about (including myself) and I greatly appreciate Dr. Mann for introducing that concept.

His presentation has other strong points such as his overview of how foods like corn evolved from their wild species to their modern counterparts due to human influence. I also found his discussion on the changing perception on healthy foods particularly interesting considering the amount of "foods" and substance that are not regulated by the FDA or any other organiza-

tion. However, many foods are sold under these perceptions and have become billion-dollar markets in themselves. He used the example of how saturated fats were once thought to be linked to cardiovascular disease but recent research has suggested that this may not be entirely true. And of course, on top of the many thought provoking topics he presented, he himself was a great speaker and very energetic.

Dr. Ted Schick, a professor of Philosophy, discussed The Ethics of Artificial Intelligence Saturday, November 20, 2017

Reported by Steven Miller

The theme for the November 2017 PhACT meeting was “The Ethics of Artificial Intelligence”. The talk was given by Dr. Ted Schick, a professor of Philosophy at Muhlenberg University, and the director of the Muhlenberg Honors Program. This talk covered topics ranging from what artificial intelligence actually is, the evolution of machine learning, whether or not it’s a threat to the current human existence, and of course the “so what?!” that inevitably follows any talk about well, anything. The talk was both compelling and at times contradictory, but certainly informative.

Dr. Ted Schick started the talk by introducing the concept of artificial intelligence and explaining how it’s been used in the past. As a professor of philosophy, I noticed that Dr. Schick did what many philosophy professors do, which is to talk about an idea and the opinions that some people have about an idea without ever unequivocally stating that he agreed or disagreed with those people. Dr. Schick spoke at length about the opinions of Elon Musk, and his statements (at various points) that machine learning is dangerous to the human existence and that it must be moderated. Dr. Schick also presented multiple quotes from Bill Gates and Stephen Hawking relating to artificial intelligence. Dr. Schick seemed to agree with these very intelligent people, but he never directly addressed his opinions, not was he pressed to. Throughout his talk, Dr. Schick pointed to multiple incredible advancements in machine learning algorithms such as the Alpha Go program, Elon Musks DOTA machine learning victory, and Saudi Arabia’s robot with citizenship. A final point that Dr. Schick spoke about which I found interesting was the ethics of artificial intelligence, who’s responsible for it, and how will it work (he mentioned the concept of some sort of “functional ethics test”, wherein a robot will be given a scenario in which it needs to make decisions regarding certain actions, including which actions are ethical).

This talk and the above points left me with the following notions about the subject matter:

- ◆ Dr. Schick believes that machine learning actually poses a great risk to the human existence



How to Think About Weird Things: Critical Thinking for a New Age by Theodore Schick Jr. and Lewis Vaughn

Paperback: 352 pages

Publisher: McGraw-Hill Education; 7 edition (January 28, 2013)

ISBN-10: 0078038367 ISBN-13: 978-0078038365

This concise and engaging text teaches the basic principles of good reasoning through an examination of widely held beliefs about the paranormal, the supernatural, and the mysterious. By explaining what distinguishes knowledge from opinion, science from pseudoscience, and evidence from hearsay, How to Think about Weird Things helps the reader develop the skills needed to tell the true from the false and the reasonable from the unreasonable.

- ◆ Machine learning, if not done with ethics programmed in, can lead to robots that are intended to harm
- ◆ Ethics are a societal norm, thus experiences may vary
- ◆ Very few people actually understand machine learning well enough to have justified fear or justified complacency

Dr. Schick spoke about all of the above in moderate depth, but without actually explaining just how it all works. I find this type of thing to be especially damaging, especially with regard to technical subject matter because instead of creating an informed mass of people who are able to make decisions grounded in fact, what is instead bred is a culture of fear of the unknown simply because it's unknown. Aside from the lack of depth, I generally found myself in agreement with Dr. Schick, Elon Musk, Bill Gates, and Stephen Hawking, albeit with a little bit less panic. At the end of the talk I was left with a few questions, I will briefly list them below:

Is it computer scientists/engineers jobs to slow down innovation, or society's job to acclimate to the advancement of technology?

Throughout history there have been various periods of fast innovation, and at each of those periods someone was always unhappy about the innovation. Whether it's coal miners, auto manufacturers, people working in fields, etc., machines have been doing jobs more efficiently than humans for generations... what is different about machine learning?

Is "upgrading" humans actually artificial intelligence, or simply a different implementation of existing technology?

I asked Dr. Schick about what his proposed solution to the problem would be, he stated that people would be able to "upgrade" themselves with technological advancements, thus enhancing ones ability to gain knowledge through some sort of intermediary that allows us to work with technology. I found this to be an interesting idea, but one that lacks any actual merit in the form of "solving the problem"... Surely, if machines are smart enough to be self-aware they'll advance far beyond us even if we're able to somehow create an ability to integrate them into our brains.

What IS the solution to the problem?

Like many others, I don't know the exact solution. In my mind the perfect solution would be to allow innovation to exist, but to regulate its advancement so that it's done responsibly with some sort of oversight. Whether or not everybody is comfortable, machine learning is here and it's going to continue to advance, the best we could hope to do is allow it to grow in a way that benefits the most people possible with the least harm possible.

There was one final piece of the talk that I found worth mentioning, but separately from the rest of my summation. Dr. Schick spoke awhile about the idea that we could possibly be living in some sort of computer simulation, and then showed a clip of Elon Musk stating that he believes that the chances that we are not living in a computer simulation is "one in billions". When I first heard this thought, I remember thinking to myself "ah, that's an interesting concept", but then the head scratching begun and questions began to brew...as I sit today in Boston today, almost one week later, I have the same questions. I wonder how this idea is any different from worshipping a deity and stating "the odds that we are not living in a world run by a Christian god who created everything is one in billions". In addition to this, I find this theory similar to the god theory in that it can never be proven or unequivocally disproved. One that's living in a computer simulation could never become conscious of the fact that they're living within a computer simulation. Besides, even if we submit to the idea that we are in some sort of simulation, does that make our reality any less real to those of us living within the simulation?

I very much enjoyed Dr. Schicks talk, and while I disagreed with a few of his points and believed that some of the fear of computer advancement is misplaced, I generally agree that artificial intelligence is growing at a rate that is very difficult to keep comfortable with.

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It is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be.

~ Isaac Asimov



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

Wednesday, February 28, 2018 at 6:00 PM – 7:30 PM

Treading on Toxicity: The Science, History, & Implications of Philadelphia's Lead Soil Contamination by Cynthia Hall, West Chester University

Museum open until the talk begins at 6pm.

Philadelphia has a lead problem but it isn't in our drinking water—it's in our dirt. Lead has been in Philadelphia soil for a while, stemming from the city's long industrial history. Recently, however, a building boom has been churning up and spreading around soil containing hazardous levels of lead, which is a known neurotoxin with debilitating effects on children. How did lead get into our soil? How do we measure it? And, what role can scientists play in activism and social justice around lead contamination? West Chester University Geologist Cynthia Hall joins us for a Weeknights at the Wagner to share the history of lead contamination in Philadelphia, the data that she and her students have collected, and the wider implications of this grave problem in the city.

About the speaker: Dr. Cynthia Hall is an Associate Professor in the Department of Earth and Space Sciences at West Chester University. She received her Bachelor's of Science in Chemistry from Howard University and Ph.D. in Geochemistry from Georgia Tech. Dr. Hall has worked extensively on studying lead contamination in Philadelphia soils and, along with her research assistants, is focusing on addressing both the scientific and environmental justice issues surrounding this national crisis. She also works alongside her husband to run Free Haven Farms, which is a small, homestead farm in South Jersey that distributes fresh, organically-grown produce to local residents and businesses.

Free and Open to the Public

Adult Education

Current Course Schedule - 2018 Winter/Spring

The Real Dirt: The Science Behind Soil, Professor Karen Snetelaar

6 Tuesdays, January 16 - February 20, 2018, 6:30 - 7:30 PM; Pennsylvania Horticultural Society, 100 N. 20th St. (20th and Arch)

This course will investigate several aspects of soil, with a focus on their relevance to plant growth. Topics will include the physical nature of soil and a discussion of soil chemistry. The focus will be on nutrient cycling and soil ecology, including how to promote plant growth by appropriate management of soil conditions.

This course requires preregistration. See website or call 215-763-6529 x23.

New Topics in Contemporary Physics, Professor Paul J. Angiolillo
 6 Mondays, January 22 - March 5, 2018, 6:30 - 7:45 PM; Falls of Schuylkill Neighborhood Branch of the Free Library of Philadelphia, 3501 Midvale Avenue (at Warden Drive)

This course will explore the latest developments in physics, including the very recent discoveries of gravity waves, the advancing field of exoplanet hunting, and the science of biophysics. The course will also consider the history leading to these discoveries and their Philadelphia connections.

No preregistration necessary. Register by attending the first class.

The Biochemistry of your Medicine Cabinet - and Beyond, Professor Joseph B. Rucker

6 Wednesdays, January 24 – February 28, 2018, 6:15 - 7:30 PM; Independence Branch of the Free Library, 18 S. 7th Street (between Market and Chestnut)

A biochemist provides insight into how common (and not so common) medicines work.

No preregistration necessary. Register by attending the first class.

Macroevolution and the History of Life, Professor Jason Downs

8 Saturdays, January 27 - March 17, 2018, 10:30 AM to Noon; University of Pennsylvania Museum of Archaeology and Anthropology (33rd and Spruce)

This course will examine macroevolutionary processes and patterns in the history of life on earth, providing a view of evolution from the broadest perspectives.

This course requires preregistration. See website or call 215-763-6529 x23.

Splendor in the Grasses: A Natural History of the Plant Family Poaceae, Professor Jordan Teisher

6 Tuesdays, March 27 - May 1, 2018, 6:30 - 7:30 PM. Pennsylvania Horticultural Society, 100 N. 20th St. (20th and Arch Sts.)

The grass family, Poaceae, contains over 11,000 species distributed across the globe in virtually all habitats. It is arguably the most valuable plant family to humans, providing over half of the daily caloric intake of the world's people. This course is a broad survey of some of the basic biology of grasses including taxonomy, morphology, ecology, evolution, and domestication.

This course requires preregistration. See website or call 215-763-6529 x23.

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Wagner lectures and courses are FREE and open to the general public. Contributions are gratefully received. Courses are taught at introductory college level.



Why We Mustn't "Believe In" Science

by Paul Schlueter III

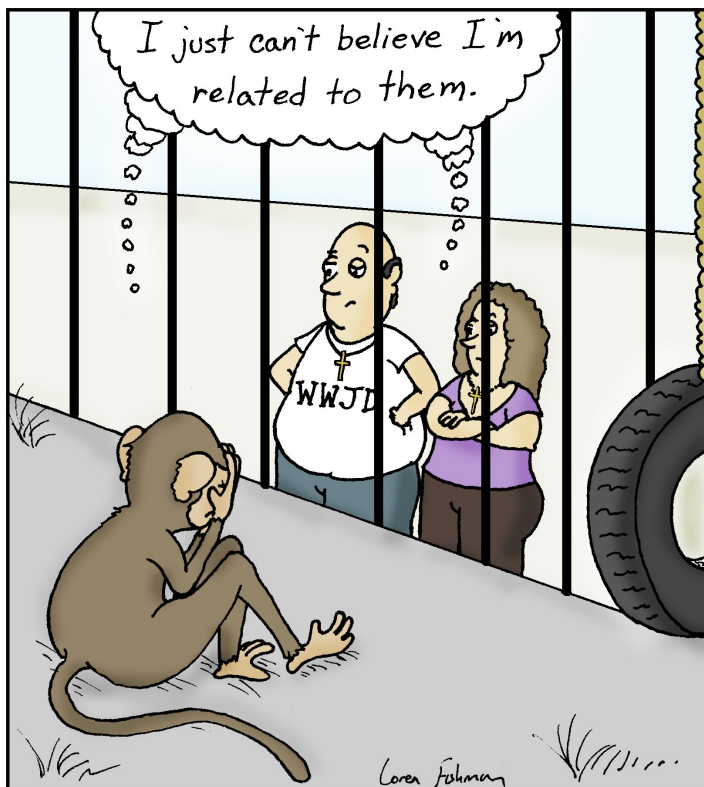
"Religion is a culture of faith; science is a culture of doubt." — Richard Feynman

There is an ongoing conflict throughout the world, one that may seem most crucial right here in the USA. It is the conflict between Science and Religion. Though we are among the most technological societies of the world, an astonishing percentage of Americans proclaim that they are believers in one faith or another.

Various denominations of fundamentalist Christianity tend to proclaim their beliefs the loudest, and a particular sort of fundamentalist Christian seeks to enshrine his/her beliefs in civic Law (Sharia law, Mosaic law... both violate the 1st Amendment's Establishment clause). Allow such peo-

ple to go unchallenged, and they will surely not stop imposing doctrine after doctrine upon the rest of us, until America literally does become an intolerant regime of the Biblical (in one interpretation or another). This intention, this devotion, this obsessive compulsion, basically boils down to one thing: some people believe that their interpretation of the Bible (invariably proclaimed to be "the Word of God") MUST be adopted by EVERYONE. Yes, they still admit to a theoretical existence of "free will" in deciding whether or not to adopt their beliefs, but their true underlying desire is to eliminate from their society (presumably, from the nation itself) anyone who chooses NOT to accept their form of their belief. Not only will infidels be expelled, but also neighbors (however "loved"), friends, and even immediate family members as well. Even now, certain sects practice various forms of "exclusion from the Fold," most often for failure to conform to the Fold's standards of sexuality (fornication, adultery, homosexuality, abortion*... all Death Penalty offenses in the Bible).

True Believers exist in nearly every strata of society, from the seats of government to the cells of state and federal prisons. Believers of every stripe build institutions for the perpetuation of their own version of "Truth," from grammar school to high school and even to college. They repeatedly seek to seat fellow believers on school boards and college boards with the express purpose of taking control of the schools' curricula, in order to ensure that their version of "Truth" is ALL that will be taught to their children and youth. Their perennial target is the teaching of Evolution, anathema to the creation mythologies of nearly every religion. Next in line for elimination is "Old Earth" Geology (or, for the rest of us, the science of plain old Geology itself), and of course any version of Astronomy that scientifically approaches the scope and age of the physical Universe. These disciplines are viewed as heresy by the faithful, be-



cause they offer the reasoning intellect evidence of the ignorance within ancient mythology and religion. Even ancient, unknowing error cannot be acknowledged among the Faithful, nor even tacitly ignored; their "Truth" must be unchallenged, inarguable, and absolute. Only in its "perfection" is "the Word of God" worthy of blind obedience and proselytization.

However, over the last several centuries Science has developed. One aspect of science that distinguishes it from Faith is its provisional nature. With science, learning is sought by multiple means, and by multiple parties (often in direct competition with one another). That learning accumulates over time, as ideas are turned into testable hypothesis, and as those hypothesis are actually tested. The accumulation is always subject to reanalysis and retesting, even in its most basic foundational precepts. As new questions arise,

potential exception, and the need to adopt numbers and scales beyond simple comprehension calls for the development of expertise among scientists. In every science, there is an elementary level of understanding which can be taught to anyone (usually in the school system), but also a depth and complexity which can only be truly understood with years of specific, focused additional learning. To understand Statistics, one MUST study Math far beyond simple Arithmetic, beyond even the Geometry and Algebra which lose many students in their complexities. To understand Physics, one must get well beyond the simple inclined plane, the basic screw, and the ordinary lever. Gravity, far beyond the simple parable of the falling apple in Newton's edenic garden, has at this date yet to be clearly explained, having some arcane dependence upon the just-confirmed Higgs boson and Einstein's oversimplified "graph paper wells" of space time, curving around objects having mass. We're still trying to figure out exactly how, and why, Gravity works at all.

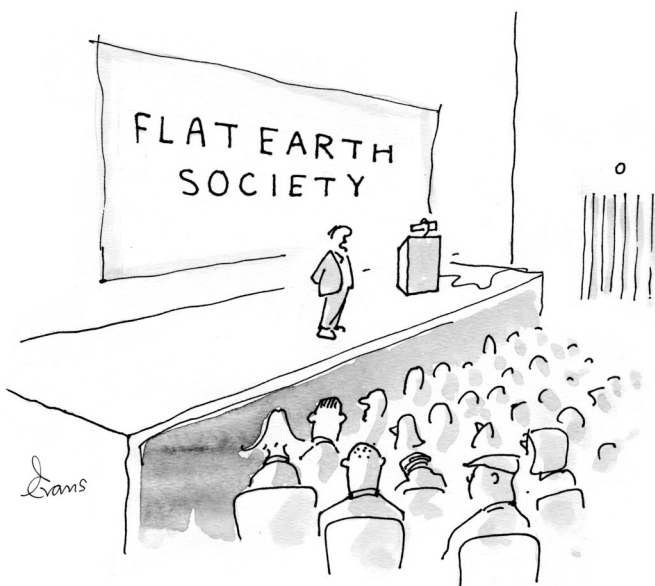
The True Believers will gleefully proclaim that because science does not yet know "everything," it is a false "way of knowing" which is good for nothing! (God, on the other hand, is omniscient, so His Word is the last word.) To this same day, Creationists will cite "gaps in the fossil record" (often, ones filled in a century ago!) as "proof" that humans are Divine Creations, not linked to eons of evolution through a broad variety of forms.

Creationists will ALWAYS argue the gaps, until by some miracle science can produce the complete geneology, the full family tree, of every single human, pre-human, and proto-human, leaving no generation out of the mix. Genesis, after all, lists ITS genealogy, so why can't science? Go all the way back to single-celled organisms. Then, demonstrate how that first cell "came to be alive in the first place." Even with this demand for unrealistic exhaustion, if science COULD somehow meet that burden, the True Believers would simply refuse to believe some essential aspect, and proclaim that the chain of proof is thus broken. Belief will not allow itself to be disproven.

The True Believer then pronounces, "After all, science is only what you believe, so it's no better than what I believe!"

In this vain and arrogant argument, the Believer thinks he has the irrefutable victory. In his mind, belief is the ultimate standard of proof. Witness John 3:16: "... so that whomsoever BELIEVETH in Him shall have eternal life..." Acceptance of the infallibility, the divinity, and the immortality of Jesus Christ (son incarnate of the One God, Himself) is proven to every Believer simply by telling the myth of Him within the Bible. No further proof need be offered; believe, and you are saved. You will become immortal, too! Therefore, to believe (the very simple verb) is the ultimate expression of proof.

The Believers think they have science by the throat with



"Please welcome our first speaker who will discuss
"The Challenges of Globalisation"."

CartoonStock.com

science pursues their answers wherever the evidence may lead, in an ever-finer precision and ever-widening scope. What makes it all "provisional" is science's willingness to change its story when evidence indicates flaws.

True Believers find provisionality itself to be a flaw. They loudly cite any reversal of explanation as a wishy-washy flip-flop, and deride it as proof of incompetence. Science accepts that sometimes errors must be corrected, and then corrects them. Imagine the trouble we'd all be in if we were stuck living forever with the earliest errors we made in learning basic Math. Instead, we learn to correct our mistaken thinking, and we are thereafter the better for it!

The search for specificity, the effort to exhaust every

this claim. To believe, one requires no special education or expertise. All one need do is refuse to question or doubt, and to oppose any inconvenient idea. Any damned idiot can believe, if only he WILL it, and in his belief he is superior to even the greatest of minds, because God supports him!

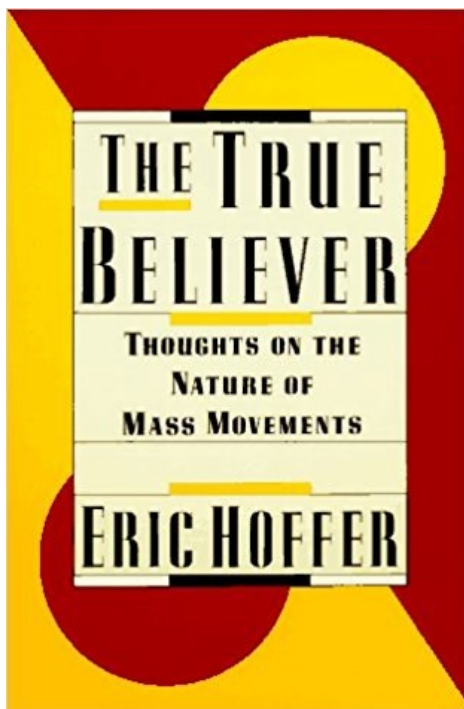
Now, you and I come into the frame with imperfect understandings, including many gaps in our limited knowledge. Simply put, science has learned so much over the centuries that no single person can grasp its entirety, let alone cite chapter and verse. Even if we happen to be experts in a couple (or even three!) fields of science, the Believer need only challenge us with a question outside our personal expertise, and whamo, now "You don't know! You only BELIEVE what you've been told by someone else! AHA! Science is ALL just FAITH, after all!"

Here's the fun part: Even if I'm an expert in Electronics (and I know pretty much...) I can be "caught out" with the simple demand, "Have you ever personally seen an electron? Then how can you claim to understand how it behaves?" Ditto a magnetic field, current against resistance, etc. I can demonstrate (see the word "demon" in there? Aha! All demonstrations go against God!) the presence of an electron imbalance (voltage) with a simple, cheap meter, but if I measure it again with another meter and get even the slightest variation in value, then which is right? I can choose to

"believe" one meter or the other, right? A man with one watch KNOWS what time it is, but a man with two watches can never REALLY be certain! If I'm not careful, a determined True Believer can "refute" my provisional understanding of electronics with just a few clever questions.

Where does this leave me when I seek to defend Evolution, or the ancient nature of Geology, or the vast reaches of Cosmology? In these advanced fields, my knowledge is scarcely above that of the typical high school graduate, and I only have THAT small advantage because I have a voracious appetite for reading about the sciences - any science will do!

Chemistry is probably the science I understand the least, yet I've accumulated more random facts and information from reading about Chemistry than you might expect. In Quantum Physics (arguably the most advanced science, perhaps capable of eventually pulling together the elusive Theory of Everything which will finally unite ALL the many sciences into an interwoven, consistent, and predictable web of knowledge) I am certainly inexpert, yet I can carry on a conversation on the subject with some grasp, and I have information to offer to almost anyone (save those who have made Physics their field of advanced study - I would HOPE they understand it better than I do, right?)



The True Believer: Thoughts On The Nature Of Mass Movements

By Eric Hoffer

Publisher: HarpPeren; 8th edition (October 6, 1989)

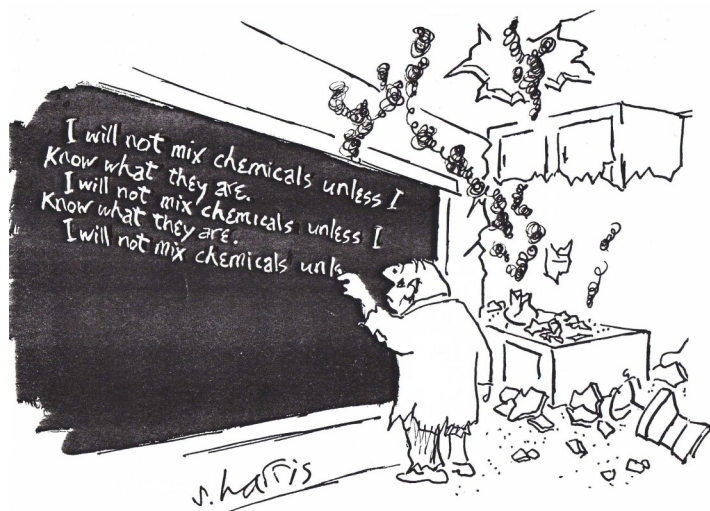
First published 1951 Paperback: 192 pages

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The True Believer: Thoughts On The Nature Of Mass Movements is a 1951 social psychology book by American writer Eric Hoffer, in which the author discusses the psychological causes of fanaticism.

Hoffer analyzes and attempts to explain the motives of the various types of personalities that give rise to mass movements; why and how mass movements start, progress and end; and the similarities between them, whether religious, political, radical or reactionary. He argues that even when their stated goals or values differ, mass movements are interchangeable, that adherents will often flip from one movement to another, and that the motivations for mass movements are interchangeable.

Thus, religious, nationalist and social movements, whether radical or reactionary, tend to attract the same type of followers, behave in the same way and use the same tactics and rhetorical tools. As examples, he often refers to Communism, Fascism, National Socialism, Christianity, Protestantism, and Islam.



CartoonStock.com

But it's not about WHAT I know, or what YOU know. It's about HOW the information we've absorbed was accumulated in the first place. In the sciences, knowledge accumulates from study, observation, hypothesis, testing, and revision of the hypothesis. There is never "a last word," or "an unquestionable fact," nor perhaps even "a Theory of Everything" which will ever be known to us mere humans. If I can prove that previous understanding was somehow wrong (in spite of the human tendency to cling to the old idea in favor of the novel), then I can advance knowledge. Yeah, lowly ol' me! So can you, and so can the True Believer, if he simply pursues the rigors of gathering scientific evidence rather than proclaiming certainty.

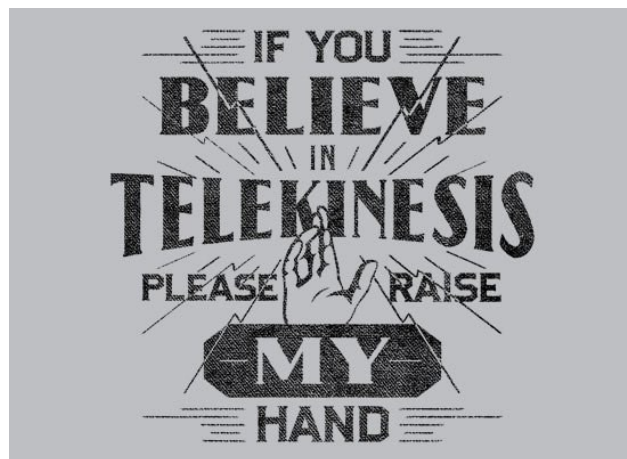
In fact, the True Believer can discover new scientific evidence, change the accumulated body of knowledge (provisionally!), and perhaps even benefit the world, all while clinging to his True Faith in those matters which concern belief. A jurist of high integrity can, while maintaining devout Christian faith, rule according to Reason and Law (witness Judge Jones's opinion in the *Kitzmiller v. Dover School District* decision, regarding the teaching of Intelligent Design in public schools). Sir Isaac Newton, acknowledged as "the Father of Physics" in his time and beyond, was at the very same time a devout Christian apologist. I once met a young woman who was a devoted Jehovah's Witness (and thus, a strict Biblical creationist) who worked in the field of genetic botany, extending upon the work of Gregor Mendel (a Christian monk who was instrumental in explaining the inheritance of characteristics and selection by deliberate breeding).

Clearly, one can be a "Believer" and ALSO be a scientist, with a modicum of cognitive dissonance. Go ahead, believe your "six impossible things before breakfast" (it'll surely delight small children in your household!), and then go ahead and report for work at the medical center; just (please...) don't confuse the popularity of prayer with the practicality of inoculation!

In the practice of science, there can be no room for declaration of faith. There are indeed scientific doctrines and dogmas, but they are either evidence-based, or will soon be replaced by ones that are. In the sciences, declared certitude has no value. All things in science have value only so long as they reflect the best testable reality, and EVERYTHING is subject to revision if the evidence of future examination so warrants. In the sciences, knowledge increases BECAUSE the best scientists remain open to the idea that every answer raises new questions, and some of those questions have the potential to change whatever we now think is true. In the sciences, it is no "sin" to be wrong; simply correct the errors as you find them, and resume the indicated course. The only real "sin" in science is to believe that you cannot possibly be wrong!

* The observant reader has noticed that abortion is not, in fact, forbidden by the Bible. It is perhaps an old enough practice to have existed in Biblical times (under the rubric of "witchcraft," no doubt), but the modern medical practice of abortion was never specifically addressed by the Biblical authors. Instead, modern "Pro Life" believers (most of whom consider themselves religious) proclaim abortion to violate the divine law against killing another human being. If you obtain or provide abortions, all bets are off - the fanatical extremists of the Pro Life movement will devoutly take your life for your heresy, and do so under proclaimed authority of God.

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Marzipan Quixote

By Albert Fried-Cassorla

(December 21, 2017)

“What is more dangerous than to become a poet? which is, as some say, an incurable and infectious disease.” - Miguel de Cervantes Saavedra, Don Quixote



In a Toledo shop, before me stood the greatest Marzipan Quixote of any nation

He was taller and longer by far than any other such insane confection

Almonds world-wide wept over this wasteful creation

And yet I admired his aptness of judgment and fierce demeanor, all in defense of beauty, womanhood, and justice — for I too am a believer

Still, I wondered aloud, “Where is your companion, the one who assists you come what will, Be in dragons, evil knights or malicious windmills?”

I pressed him for an anza

He replied: “I await my halvah Sancho Panza”

Albert Fried-Cassorla is Adjunct Professor of English at Gwynedd Mercy University. He is a playwright, a licensed poet and the founder of the Melrose Park Philosophy Club. Albert, a marzipan enthusiast, recently traveled in Spain. .

albfcc@verizon.net

"We cling to memories as if they define us, but what we do defines us."

Motoko/Major, from The Ghost in the Shell

Where Is The Ghost?

by Paul Schlueter III

The Ghost in the Shell is a movie I've recently enjoyed, something of a Blade Runner for the 'teens. In it, Scarlett Johansson's character is a cyborg, the result of inserting a human brain into an entirely artificial humanoid body. Her doctor/creator has a device that can display the cyborg's experiences and perceptions, and when convenient the doctor can wipe "glitches" from the cyborg's memory.

I'm quite interested in the idea that this sci-fi film views the brain (realistically, for a change) as the seat of human memory, mind, and "ghost." The ghost here implies living human "spirit," not any sort of supernatural effect which survives brain-death. But it's important to the plot that memory seems to cling to the physical grey matter of the brain, even despite technological "wiping" of inconvenient memories.

In real neuroscience, it is accepted that memories have some sort of physical (though not securely fixed) manifestation within the brain, most likely electrochemical signatures stored by neurons. It is still not yet clearly understood exactly how human thought or memory work on the cellular scale, but it seems to be easier to create a false memory (or distort one that exists) than to "wipe" or delete one. The more we learn, the less reliable human memory proves to be, yet it is quite persistent despite its flaws.

The movie offers the quote at the head of this essay as a sort of moral. Stated at both beginning and end, it appears to be the deep thought around which the entire movie is premised. Unfortunately, anyone with philosophical leanings will quickly notice the fallacy within the dictum.

Deeds, when directed by the motor control of a human brain (as opposed to a programmed output from a computer hard drive) are the result of the brain's decisions to act/respond in a specific manner. A computer's



decisions are determined when the software is written. The human brain is far more complex, and its decisions are influenced by instinct, habit, training, and education (each of which is subject to distortion or alteration over time). The reason that training and education can either create habit or enable choice is that these are registered in memory. A computer also uses memory, but it is much smaller than a human's, and is also solely subject to programming (or software errors known as "glitches"). A human's memories are far more vast, and they come from input over a lifetime through the senses, plus we have the interesting ability/ flaw of imaginative input.

When a human brain perceives some need for action/ deed, it refers to one or more of a variety of decision-reaching steps. Habit is usually the first employed, and it may well be subconscious. On a higher (but slower) level, we may also give a choice cursory thought, a sort of semi-attentive deliberation which allows for both habitual input and conscious thought. Above (and far slower than) the other two is careful deliberation, in which action is postponed pending some variety of careful evaluation, reference to memory, possible consultation with outside resources, and rationalization. The latter might be employed to either reach a new conclusion, or to support a conclusion reached already by one of the other thought processes.

However, whether a decision is adopted by force of habit, guided by semi-attentive deliberation, or subjected to careful thought, that decision is invariably made with at least some consultation of memory. Habits are responses based on such repetitive actions that they require no deliberation at all. Semi-attentive deliberation is highly intuitive, and intuition itself is an amalgam of memories, often modified by imagination, schooling, social pressures, and so on. (Intoxication has strong interactions with intuition, far too complex to discuss here.) Finally, careful deliberation relies first on memory, even if it also seeks outside input or attempts to apply (memorized steps of) logic. Without memory, none of these may operate!

Therefore, a strong argument can be made that there is no decision making, either in the human mind or in the computer processor, which does not ultimately rely upon memory. With no memory, there can be no decision; with no decision, there can be no conscious action. Other than reflex and genetic instinct, there is no deed which does not depend on memory.

Thus, the dictum of the movie script falls flat. Without memory, we can do nothing. If we are what we do, and what we do is dependent upon the use of memory, then we are indeed defined by our memories. Clinging to them would seem, especially in the moral universe presented by the context of this film, absolutely necessary to the retention of who we are, as well as the ultimate reason for everything we do.

The cyborg's human brain, to have any qualitative superiority over a complex computer, must rely upon its memories of human experience.

Society's perception of our "character" depends on some subset of our life's deeds, subjected to analysis and judgment. Our character labels are not affected by our personal memories. We define ourselves according to our memories, dreams, and hopes; society defines us according to the character demonstrated by our deeds.

As usual, Hollywood presented an idea, but by the time it made it through script development and editing, the message that reached the screen had lost most of whatever meaning it might have offered. But that doesn't mean that we can't carry the thought further.

Our tech industries are working as fast as they can on the development of Artificial Intelligence (including some exciting early steps in the creation of working quantum computers). There have been remarkable advances in human/ machine interfaces, enabling both neuro control of prosthetic devices and ever-improving scanners which can identify the brain region(s) activated by given thoughts. The precision of the latter has not yet reached a text-like readability, but big, bulky machines can read broad conceptual thoughts. A reliable lie detector remains just beyond our ability.

Self-driving vehicles (and even un-manned, semi-autonomous drones) already share the roads with human-driven vehicles. Autopilots in aircraft are so reliable that human intervention is quickly becoming a remarkable flight event. We don't hear much about self-navigating luxury yachts, but drug runners are already delivering loads to America via autonomous, unmanned submarines. Drone aircraft routinely carry illicit payloads back and forth over land borders. And we can rest assured that whatever civilians and organized crime can do, the military is doing it even better.

Manufacturing and medicine are so reliant on robotics that our economy and health care services would collapse if anyone were to "crash" the computerized controllers. Cyberwarfare is the big buzz word, and not just because votes may or may not have been tampered with. Stuxnet was effective in interrupting the Iranian development of weapons grade refined uranium, and it was merely a programming oversight that perpetuated that "worm" until civilians noticed it and announced it to the world. How much code is out there now, quietly working for (or against) our nation despite the very best efforts of Wikileaks, et al.?

In the field of Law, our nation is just beginning to acknowledge that juveniles (even ones who murder) are less culpable for their crimes than adults. It has been declared unconstitutional to subject a juvenile to automatic life without parole in the U.S., and Pennsylvania (having been found to hold more juvenile LWOP prisoners than any other juris-

diction in the world) is experiencing a legal crisis in trying to determine how best to resentence some 500 offenders in conformity with the new standard. Why? Because a juvenile is neurologically incapable of the sort of empathy, deliberation, and emotional control that maturity grants adults. They don't merely lack the memories and experiences to make good decisions; they ALSO struggle with what amounts to incomplete hardware development! The cognitive center of the brain doesn't reach full efficiency until a fatty sheath called myelin can fully insulate neurons in this crucial (but last to mature) area of the brain. It may not be limited to juveniles; young adults, aged 18 to "the mid-twenties" may still suffer from similar incomplete development, and therefore, may also deserve (proportionally) lessened culpability. We've long known that criminal behavior "drops off" with maturation, in inverse proportion to the development of "adult responsibility." Does this mean that kids and young adults should get a "free pass?" Of course not. It does suggest that we should rethink some aspects of our hard outlook on criminal punishment for young people. The legislatures and courts are only just beginning to grasp the (still developing) neuroscience, and apply it to social policy. It's been a national issue for five years already; we can expect the states to struggle with this for at least another decade.'

Meanwhile, Crispr/Cas9 gene editing is opening the possibility that we'll be able to manipulate human neurology before long. What we CAN do, we generally end up doing, so it's probably not a question of if, but when. Also, how much change can human brains tolerate? How much alteration will society tolerate?

It's already commonly understood that an IQ difference of 20 - 30 points is sufficient to create social inequity. Smarter people run stuff, and the not-so-smart end up serving as "grunts." IQ is thought to "average out" at roughly

100 points, with extreme disadvantage for a person of 70 points, and world dominion swiftly accruing to those in the 150 - 160 range. What will we do when someone figures out how to tweak the "Flowers for Algernon" gene and bump ANYONE up 50 points above their current IQ? The richest will get the boost first, of course. Will their Empathy Quotient (EQ) jump by the same factor, or will the increased intellect be accompanied by unaffected (or diminished?) levels of humanitarianism?

I might not worry if Elon Musk or Bill and Melinda Gates suddenly become 50 IQ points smarter, but what if Ted Kazcinski (the Unabomber, IQ=165) finagles his way into the human trials, and gets a similar boost?

On the other hand, what if science discovers a way to "cure" the selfishness at the root of most criminality? Can thugs be implanted (someday) with a device that will cause them to actually feel the humility and pain their behavior causes others? Will every child end up receiving such an implant in their infancy? Or will ubiquitous surveillance and a pervasive internet simply end up

making it impossible to get away with corruption and crime? (imagine the prison system we'd need THEN!)

The ghost within each of us lies in a sack of fluid, encased in our boneheads. Since deeds really are heavily influenced by our memories, will greater knowledge of our neurology enable us to edit our memories so our behavior improves? Will this allow us to make better decisions for ourselves, our families, our communities, and the world? Or, are we ultimately going to have to rely on a raven-haired hottie in a white body suit to protect the compliant by executing the evildoers among us? The evidence of our collective history doesn't bode well, but perhaps science will yet save the future.



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 20, 2018 at 2:00 PM. PhACT Lecture Paul Halpern, Ph.D., a physicist and cosmologist, will discuss his new book: *The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality.*

In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Saturday, February 17, 2018 at 2:00 PM. PhACT Lecture. Robert Hicks, Ph.D., curator of the Mutter Museum at the College of Physicians of Philadelphia, will discuss: *Vaccination Pure and Spurious: The Confederate Vaccination Crisis of the Civil War*

In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Saturday, March 17, 2018 at 2:00 PM. PhACT Lecture. TBA

Saturday, April 21, 2018 at 2:00 PM. PhACT Lecture. Rob Brotherton, PhD. Will discuss "Hip Hop and the Illuminati".

In Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets.

Saturday, May 19, 2018 PhACT Expedition. At 2:00 PM at Laurel Hill Cemetery at 3822 Ridge Avenue in Philadelphia. \$15.00 suggested contribution to Laurel Hill.

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>

Lectures and Other Events of Interest for Skeptics Around Philadelphia

Saturday, January 13, 2018 at 11:00 AM at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Saturday Speaker

Dive into fascinating stories of science with our Saturday speaker series!

Every month a speaker will offer a short talk on an intriguing scientific topic, followed by a Q&A or discussion over complimentary tea and coffee. Afterward, feel free to mingle with other guests and the speaker, or spend time visiting the Museum at CHF.

Admission is free, and no reservations are necessary.

Tuesday, January 16, 2018 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/>

Thursday January 18, 2018 at 6:00 - 8:00PM at Landmark Americana Tap & Grill at 54th and City Avenue, Philadelphia 19131 at St. Joseph's University

<http://scienceonthehill.weebly.com/>

Pirate Website Unlocks Access to Scholarly Literature

Dr. Daniel Himmelstein, a data scientist currently working out of the University of Pennsylvania's Greene Lab, will be sharing his story about breaking down the "toll access" publication model, which prevents the public from accessing academic articles. Using computer and data science, Dr. Himmelstein will show you how websites like Sci-Hub are already making primary science articles easier to access than ever before! Join us Thursday January 18th 6:00-8:00PM at Landmark Americana for some delicious food, inspiring science, and post-holiday merriment! Free and Open to the Public.

Registration Requested.

Thursday, January 18, 2018 at 5:30pm to 7:00pm at the American Philosophical Society, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia

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

Jefferson: Architect of American Liberty

In honor of the American Philosophical Society's 275th anniversary, the Society's 2018 lecture series will feature talks inspired by the APS's history and the work of its Members. Our first

talk is from John Boles, author of a celebrated new biography of Thomas Jefferson. 2018 will also be the 275th anniversary of Jefferson's birth.

Jefferson: Architect of Liberty plumbs every facet of Thomas Jefferson's life, all while situating him amid the sweeping upheaval of his times. We meet Jefferson the politician and political thinker—as well as Jefferson the architect, scientist, bibliophile, paleontologist, musician, and gourmet. We witness him drafting of the Declaration of Independence, negotiating the Louisiana Purchase, and inventing a politics that emphasized the states over the federal government—a political philosophy that shapes our national life to this day.

John B. Boles is the William P. Hobby Professor of History at Rice University and the former editor of the Journal of Southern History.

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

**Saturday, January 20, 2018
2:00 PM.**

PhACT Lecture. Paul Halpern, Ph.D., a physicist and cosmologist, will discuss his new book:
The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality

Tuesday, January 23, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN LIGHTBULB CAFÉ

Herman Beavers, professor of English and Africana studies, School of Arts and Sciences

Part of the African-American Resource Center MLK Symposium events

"Geography and the Political Imaginary in the Novels of Toni Morrison"

Professor Beavers' talk will focus on one of the most important figures in American letters, Toni Morrison, and will be based on his forthcoming book, *Geography and the Political Imaginary in the Novels of Toni Morrison*. He will touch on how black men perform manhood in her novels, the spatial relations Southern migrants experience in New York City, the role black women play in the establishment of spaces of resistance, how race figures into the transition from indentured labor to paid labor and the relationship between

precariousness and placemaking. Free and Open to the Public.

Thursday, January 25, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Bryan Caplan | The Case Against Education: Why the Education System Is a Waste of Time and Money

Dubbed the "anti-Tiger Mom," contrarian economist Bryan Caplan is the author of the "wickedly subversive" (Wall Street Journal) parenting manifesto *Selfish Reasons to Have More Kids*, which argues that parenting has needlessly been turned into a tedious chore; and *The Myth of the Rational Voter*, which questions fundamental assumptions about why Americans vote as they do. In his latest book, Caplan argues that we need to stop wasting public money on education, explains why graduate degrees are little more than conformity signals, and advocates for major policy changes at levels of the academy. Read Caplan's essay *The World Might Be Better Off Without College for Everyone* in the current issue of *The Atlantic*.

Cost: FREE

Friday, January 26, 2018 at 10am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.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? This monthly tour series provides an informative overview of Laurel Hill's long and colorful history, which includes many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. "The Hot Spots and Storied Plots" is the perfect introductory tour for anyone who enjoys beautiful art, scenic nature and fascinating history. Laurel Hill's experienced graveyard guides will offer visitors a unique perspective for every tour.

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

Tour Guide: David Schwarzkopf

See website for details of admission cost. Tickets can be purchased at the door or online.

Saturday, January 27, 2018 at 3:30 – 4:30 PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

THE MARSHA BAGOISH UNDERWATER PROJECT

Dr. Emad Khalil, Executive Director for the Center for Maritime Archaeology and Underwater Cultural Heritage and Professor of Maritime Archaeology, Alexandria University, Alexandria, Egypt, speaks at this American Research Center in Egypt, Pennsylvania Chapter program at the Penn Museum. Anthropology Room 345.

Admission: \$10 for the general public; \$7 for Penn Museum members, Penn faculty and staff; \$5 for students with ID; and FREE for ARCE-PA members and children under 12.

Monday, January 30, 2018 at 7:00 PM at Scoogi's Italian Kitchen & Bar
738 Bethlehem Pike Flourtown, PA 19031

American Revolution Round Table of Philadelphia,

<http://arrtop.org/>

George III and the Parliamentary Politics of Revolution

Among students of the American Revolution, George III is widely recognized as the 'mad' king who lost the American colonies. The years of revolutionary upheaval, from the Stamp Act of 1765 to the Treaty of Paris in 1783, coincided with a period of political instability in Great Britain. George III struggled to establish a stable political partnership with a trustworthy chief minister who could lead the House of Commons. In this talk, the impact of Parliamentary volatility on the conduct of the American War (and vice-versa) will be discussed. The legacy of this period of George's rule on his historical reputation will also be reviewed.

Join us on Monday, January 29, 2018 as we welcome Kathleen Connolly Flanagan as she presents King George III and the Parliamentary Politics of Revolution

Free and Open to the Public.

Thursday, February 1, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Max Boot | The Road Not Taken: Edward Lansdale and the American Tragedy in Vietnam

Referred to as one of the "world's leading authorities on armed conflict" by the International Institute for Strategic Studies, military historian and foreign-policy analyst Max Boot is the author of *The Savage Wars of Peace*, *War Made New*, and the New York Times bestselling *Invisible Armies*, a centuries-spanning look at guerilla warfare. He serves as the Jeane J. Kirkpatrick Senior Fellow at the Council on Foreign Relations. Echoing current-day entanglements and unlearned lessons in Iraq and Afghanistan, *The Road Not Taken* tells the story of a legendary CIA operative and his visionary but ignored "hearts and minds" roadmap to an American victory in the Vietnam War.

Cost: FREE

Tuesday, February 6, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN SCIENCE CAFE

Jonathan Heckman, assistant professor of physics and astronomy, School of Arts and Sciences

"After the Higgs Boson: What's next for fundamental physics at the Large Hadron Collider?"

Professor Heckman is a theorist working at the interface of particle physics and string theory and in particular how to "connect strings to things." His work aims at addressing what is the structure of Nature at the shortest distance scales. Recently there has been much excitement about the discovery of the Higgs boson. But what is the Higgs boson and what comes next? Come learn what physicists hope to understand about fundamental particles and interactions from the Large Hadron Collider.

Free and Open to the Public.

Tuesday, February 6, 2018 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

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

Free. A reception follows the lecture.

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections.

Tuesday, February 6, 2018 - 6:30pm to 8:00pm

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>

The Franklin Institute Speaker Series

THE FIGHT FOR FACTS: SCIENCE AND THE ART OF STORYTELLING

Two-time Pulitzer Prize winner and science journalist at The New York Times, Amy Harmon, renowned for her reporting on science and technology in everyday life, will join The Franklin Institute's Chief Bioscientist, Dr. Jayatri Das, to explore the critical role narrative storytelling plays in revealing the true nature of science. More than a string of results, science—when told as a story—emerges as an ever-evolving process. Ms. Harmon will discuss her own work and the increasing import of story-driven science journalism in today's polarized media landscape. Join two of the most vibrant voices in today's scientific com-

munity for a timely conversation about science, society, and the powerful role storytelling plays in shaping both.

The speaker series is free and open to the public, with advance registration required.

Tuesday, February 6, 2018 -7:00 pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

NIGHT SKIES AT THE JOEL M. BLOOM OBSERVATORY

Join us for an evening of 'out of this world' astronomy activities hosted by Franklin Institute Chief Astronomer Derrick Pitts. 'Night Skies at the Observatory' is a monthly stargazing event connecting you to celestial objects in the night sky including stars, planets, and nebulae using telescopes in Bloom Observatory and at 'Ben's Starlight Lounge' on our 5th floor rooftop observation deck, featuring a cash bar. Build your own experience from any combination of planetarium shows, a live science talk on astronomy or space science, hands-on astronomy activities and continuous telescopic observing all evening (weather permitting). The program is staffed with knowledgeable observers and free star maps are provided.

See website to purchase tickets.

Tuesday, February 6, 2018 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 Southern Campaign of the Revolutionary War

John McGaha – Valley Forge NHP Ranger

The often-overlooked story of the brutal Southern Campaign, the final act of the long Revolutionary War.

Open to the Public. Free but a \$10.00 donation is suggested.

Reception follows the lecture.

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>



Wednesday, February 7, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Susan Meissner | As Bright as Heaven

Author Susan Meissner will present her new book *As Bright as Heaven*, a sweeping historical novel about one American family's fight to survive when the 1918 Spanish flu pandemic hits Philadelphia. Susan Meissner is the award-winning author of *A Fall of Marigolds*, *Secrets of a Charmed Life*, *Stars over Sunset Boulevard*, and *A Bridge Across the Ocean* among other novels.

This program will be held in the meeting room on the library's lower level and we regret there is no elevator.

Cost: FREE

Saturday, February 10, 2018 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? This monthly tour series provides an informative overview of Laurel Hill's long and colorful history, which includes many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. "The Hot Spots and Storied Plots" is the perfect introductory tour for anyone who enjoys beautiful art, scenic nature and fascinating history. Laurel Hill's experienced graveyard guides will offer visitors a unique perspective for every tour.



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

Tour Guide: Jerry McCormick

See website for details of admission cost. Tickets can be purchased at the door or online.

Saturday, February 10, 2018 at 1:00 PM at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Til Death Do Us Part: Love Stories of Laurel Hill

Celebrate the "spirit" of Valentine's Day with your better half in one of Philadelphia's most romantic and mysterious locations. Laurel Hill Cemetery's Love Stories wintertime walking tour was inspired by the little-known story of a little-known woman whose heart – and only her heart – now lies buried beneath the cemetery's earth. Learn about her symbolic, final gesture, and other tales of love as varied as the souls from which they transpired... After all, some love stories are eternal; some love stories end; and some end very, very badly. Devotion, passion and faith prove to sway destinies as much as greed, lust and betrayal. Those stories that do not warm your heart will entertain and tantalize instead. The tour will conclude with a toasty, fireside reception replete with

wine and hors d'oeuvres.

The tour will take place on Saturday, February 10 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse. The cost is \$20/person; or \$18/students and seniors. Advance registration is requested. Tickets should be purchased online.

Tour Guide: Gwen Kaminski

Saturday, February 10, 2018 at 11:00 AM at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Saturday Speaker

Dive into fascinating stories of science with our Saturday speaker series!

Every month a speaker will offer a short talk on an intriguing scientific topic, followed by a Q&A or discussion over complimentary tea and coffee. Afterward, feel free to mingle with other guests and the speaker, or spend time visiting the Museum at CHF.

Admission is free, and no reservations are necessary.

Saturday, February 10, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Cornel West | Race Matters, 25th Anniversary Edition

Lauded for his "ferocious moral vision and astute intellect" (New York Times), educator and philosopher Dr. Cornel West is the author of the National Book Award-winning *Race Matters*, a sea change discourse on race, justice, and democracy in America. His other books include the bestselling *Democracy Matters*, *Hope on a Tightrope*, and *Black Prophetic Fire*. A former teacher at Union Theological Seminary, Yale, Harvard, and Princeton, he has collaborated on three spoken-word albums with Prince, Andre 300, Jill Scott, and a litany of other artists. More relevant than ever, the new edition of West's classic book of essays seeks methods to create a genuinely inclusive 21st-century democracy.

Horace W. Goldsmith Foundation Endowed Lecture

Cost: \$15.00. Tickets on sale January 12, 2018 at 10:00 am.

Sunday, February 11, 2018 at 2:00 PM - 3:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

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

DRAGONS OF THE NORTH: THE WORLD OF VIKING LONGSHIPS

Viking ships are among the most remarkable artifacts in the entire realm of archaeological discovery, a dominant force in European history for three centuries between AD 800 and 1100. In recent years, ambitious projects in the field of experimental archaeology have involved the reconstruction and sea trials of many ancient Viking ships. Dr. John R. Hale, archaeologist and Director of

Liberal Studies, University of Louisville, traces the ancestry of Viking ships back to sewn-plank canoes of the Scandinavian Bronze Age, and shows the links between these remarkable ships and the watercraft of the Pacific and central Africa. Program sponsored by the Archaeological Institute of America Philadelphia Society. Free.

Monday, February 12, 2018 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/>

Tuesday, February 13, 2018 at 6:30 PM at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103, (215) 563-3737 x304

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

"Pandora's Lab" Book Talk with Author Dr. Paul Offit

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.

Cost: \$10.00. Pre-registration for all programs and events is strongly urged.

Thursday, February 15, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Robert Darnton | A Literary Tour de France: The World of Books on the Eve of the French Revolution

Cultural historian Robert Darnton is the author *The Great Cat Massacre: And Other Episodes in French Cultural History*. His many other books include *The Business of Enlightenment*, *Berlin Journal*, *The Case for Books*, and *The Devil in the*

Holy Water. His towering and sundry honors include a MacArthur "genius" grant, election to the French Legion of Honor, a National Humanities Medal, and a National Book Critics Circle Award. In his latest book, the former director of the Harvard University library maps the rollicking, comedic, occasionally dangerous trails traveled by those in the French publishing industry during that country's time of greatest upheaval.
Cost: \$15.00

**Saturday, February 17, 2018
at 2:00 PM.**

PhACT Lecture.

Robert Hicks, Ph.D.,

*Vaccination Pure and Spurious: The
Confederate Vaccination Crisis of the
Civil War*

Tuesday, February 20, 2018 @ 7:00 pm - 9:00 pm at Commonwealth Chateau, Chestnut Hill College, 9230 Germantown Avenue, Philadelphia, PA 19118

The Institute for Science and Religion

<http://www.irands.org>

Physics, Faith and the Meaning of Life – Marisa Christina March, PhD

Marisa Cristina March, PhD is a cosmologist at the University of Pennsylvania where she carries out research in the field of dark energy science, a field that seeks to understand the acceleration of the Universe. Dr. March has worked on galaxy lensing for the future Euclid space mission, and she now works on supernova cosmology for the ground based Dark Energy Survey. Dr. March studied theoretical physics at Imperial College London, where she also carried out her doctoral research on advanced statistical methods for astrophysical probes of cosmology and also holds a Bachelors degree in Catholic Theology from Heythrop College London.

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

Tuesday, February 20, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

<http://www.upenn.edu/pennnews/science>
PENN LIGHTBULB CAFÉ

Jennifer Houser Wegner, adjunct assistant professor of Near Eastern languages and civilizations, School of Arts and Sciences; research scientist in Penn Museum's Egyptian Section
"Love Hurts: Heartbreak in the Ancient World"

A Penn alumna who earned her B.A. in Egyptology from the School of Arts and Sciences, Jennifer Houser Wegner has worked in Egypt since 1990 and has participated in fieldwork at Giza, Bersheh, Saqqara and Abydos. She is a co-author of Akhenaten, Tutankhamun and the Amarna Period: Revolution and Restoration, and most recently she co-authored The Sphinx that Traveled to Philadelphia:

The Story of the Colossal Sphinx in the Penn Museum.

Free and Open to the Public.

Tuesday, February 20, 2018 at 7:15 PM at the Fels Planetarium, The Franklin Institute, 222 North 20th Street, Philadelphia, PA 19103

The Rittenhouse Astronomical Society

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

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

Friday, February 23, 2018 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? This monthly tour series provides an informative overview of Laurel Hill's long and colorful history, which includes many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. "The Hot Spots and Storied Plots" is the perfect introductory tour for anyone who enjoys beautiful art, scenic nature and fascinating history. Laurel Hill's experienced graveyard guides will offer visitors a unique perspective for every tour.

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

Tour Guide: Jim Hence

See website for details of admission cost. Tickets can be purchased at the door or online.

Saturday, February 24, 2018 at 10am at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

We're All Related: Finding a 19th Century Family

Details forthcoming...

This seated presentation and walking tour will take place on Saturday, February 24 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse. The cost is \$15/person; \$13/students and seniors; or \$12/members. Tickets can be purchased at the door or online.

Tour Guide: Peter Howell

Monday, February 26, 2018 at 7:00 PM at Scoogi's Italian Kitchen & Bar

738 Bethlehem Pike Flourtown, PA 19031

American Revolution Round Table of Philadelphia,

<http://arrtop.org/>

Frontier Country: The Politics of War in Early Pennsylvania

In Frontier Country, Patrick Spero addresses one of the most important and controversial subjects in American history: the frontier. Countering the modern conception of the American frontier as an area of expansion, Spero employs the eighteenth-century meaning of the term to show how colo-

**Calling All Astronomers!
Rittenhouse Astronomical Society**

Monthly Meetings! Bring all of your out-of this-world questions! Join

The Rittenhouse Astronomical Society the third



Tuesday 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/

nists understood it as a vulnerable, militarized boundary. The Pennsylvania frontier, Spero argues, was constituted through conflicts not only between colonists and Native Americans but also among neighboring British colonies. 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." Join us on Monday, February 26, 2018 as we welcome Patrick Spero who will talk about his book Frontier Country.

Free and Open to the Public.

Tuesday, February 27, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Michio Kaku | The Future of Humanity: Terraforming Mars, Interstellar Travel, Immortality, and Our Destiny Beyond Earth

"Erudite and compelling" (Chicago Tribune), theoretical physicist and futurist Dr. Michio Kaku is a renowned popularizer of science and co-founder of String Field Theory, continuing Einstein's quest to discover a unified field theory. His bestselling popular science books include The Future of the Mind, Beyond Einstein, Physics of the Future, Physics of the Impossible, and Parallel Worlds. He has hosted several television specials for the BBC, the Science Channel, and the Discovery Channel. In his latest book, Kaku peers beyond the frontiers of science at a hopeful vision of man's future among the stars.

Cost: \$15.00. Tickets on sale January 12, 2018 at

10:00am.

Wednesday, February 28, 2018 at 6:00 PM – 7:30 PM at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

www.wagnerfreeinstitute.org

Treading on Toxicity: The Science, History, & Implications of Philadelphia's Lead Soil Contamination

by **Cynthia Hall**, West Chester University

Museum open until the talk begins at 6pm.

Philadelphia has a lead problem but it isn't in our drinking water—it's in our dirt. Lead has been in Philadelphia soil for a while, stemming from the city's long industrial history. Recently, however, a building boom has been churning up and spreading around soil containing hazardous levels of lead, which is a known neurotoxin with debilitating effects on children. How did lead get into our soil? How do we measure it? And, what role can scientists play in activism and social justice around lead contamination? West Chester University Geologist Cynthia Hall joins us for a Weeknights at the Wagner to share the history of lead contamination in Philadelphia, the data that she and her students have collected, and the wider implications of this grave problem in the city.

About the speaker: Dr. Cynthia Hall is an Associate Professor in the Department of Earth and Space Sciences at West Chester University. She received her Bachelor's of Science in Chemistry from Howard University and Ph.D. in Geochemistry from Georgia Tech. Dr. Hall has worked extensively on studying lead contamination in Philadelphia soils and, along with her research assistants, is focusing on addressing both the scientific and environmental justice issues surrounding this national crisis. She also works alongside her husband to run Free Haven Farms, which is a small, homestead farm in South Jersey that distributes fresh, organically-grown produce to local residents and businesses.

Free and Open to the Public

Tuesday, February 28, 2018 - 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

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 1, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Steven Pinker | Enlightenment Now: The Case for Reason, Science, Humanism, and Progress

Possessed of "the kind of academic superbrain that can translate otherwise impenetrable statistics into a meaningful narrative of human behaviour" (Sunday Times), cognitive scientist and linguist Steven Pinker is the author of *The Better Angels of Our Nature*, Pulitzer Prize finalists *The Blank Slate* and *How the Mind Works*, and *The Sense of Style*, a guide to practical and elegant

writing. He is a professor of psychology at Harvard University. His latest book, a follow-up to the optimistic *The Better Angels of Our Nature*, posits that the Enlightenment-era ideals of reason and science are solving some of the world's toughest problems.

Meelya Gordon Memorial Lecture

Cost: \$15.00, \$38.00 optional single + book

Tickets on sale January 12, 2018 at 10:00am.

Saturday, March 3, 2018 at 1 pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Changing Death: A Panel Discussion on Ritual and Acceptance

As part of the Free Library of Philadelphia's One Book, One Philadelphia festival, Laurel Hill will be hosting and participating in a panel discussion based around the book *Another Brooklyn* by Jacqueline Woodson. Explore how social practices, family roles, and attitudes toward that final passage have changed over time, from the funeral rites of the Victorian era to the current "death-positivity" movement. An expert panel will discuss culture, rites, fear, and acceptance, featuring *Evi Numen*, death doula, artist and curator; *Michael Brooks*, Laurel Hill docent and professor emeritus of Victorian Literature; and *Michelle Lasota*, hospice nurse. The event, inspired by the lens of grief and death in *Another Brooklyn*, will feature a walking tour of Laurel Hill Cemetery and an exhibition of works by *Caitlin McCormick*.

This discussion and walking tour will take place on Saturday, March 3 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse. Tickets are limited and advance registration is required. The cost is \$15/person; \$13/students and seniors; or \$12/members. Tickets

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

See website for details of admission cost. Tickets can be purchased at the door or online.

Monday, March 5, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Steve Coll | Directorate S: The C.I.A. and America's Secret Wars in Afghanistan and Pakistan, 2001-2016

A staff writer for *The New Yorker*, Steve Coll is the author of *The Bin Ladens*, a history of the eponymous clan and its most infamous member; the Pulitzer Prize-winning *Ghost Wars*; and *Private Empire*, an examination of the notoriously secret machinations of the ExxonMobil Corporation. A former president of the public policy institute of the New America Foundation, Coll was a 20-year writer and editor at *The Washington Post*, where he also won a Pulitzer Prize for explanatory journalism. He is currently the dean of the Graduate School of Journalism at Columbia University. Directorate S tells the sprawling story of America's post-9/11 battle against Al Qaeda and the Taliban.

Pinetree Foundation Endowed Lecture

Cost: \$15.00. Tickets on sale January 12, 2018 at 10:00am.

Tuesday, March 6, 2018 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

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

Free. A reception follows the lecture.

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections.

Tuesday, March 6, 2018 -7:00 pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

NIGHT SKIES AT THE JOEL M. BLOOM OBSERVATORY

Join us for an evening of 'out of this world' astronomy activities hosted by Franklin Institute Chief Astronomer Derrick Pitts. 'Night Skies at the Observatory' is a monthly stargazing event connecting you to celestial objects in the night sky including stars, planets, and nebulae using telescopes in Bloom Observatory and at 'Ben's Starlight Lounge' on our 5th floor rooftop observation deck, featuring a cash bar. Build your own experience from any combination of planetarium shows, a live science talk on astronomy or space science, hands-on astronomy activities and continuous telescopic observing all evening (weather permitting). The program is staffed with knowledgeable observers and free star maps are provided.

See website to purchase tickets.

Wednesday, March 7, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Sarah McBride | Tomorrow Will Be Different: Love, Loss, and the Fight for Trans Equality

Sarah McBride made history in 2016 as the first openly transgender American to address a major party convention. Also one of the first transgender people to work at the White House, she helped influence the Obama administration's stances on trans issues, served as an aide to Delaware Attorney General Beau Biden, and currently serves as National Press Secretary at the Human Rights Campaign. McBride's trailblazing story has been featured in a variety of periodicals, including *The New Yorker*, *The Washington Post*, *Rolling Stone*, and *Cosmopolitan*. *Tomorrow Will Be Different* takes a deep dive into her tale of love, loss, and accomplishment as a doorway to a larger discussion of identity and LGBTQ rights.

Cost: FREE

Saturday, March 10, 2018 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.

The walking tour will take place on Saturday, March 10 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse. The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online.

Tour Guide: Nancy W. Wright

Saturday, March 10, 2018 at 11:00 AM at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

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

Saturday Speaker

Dive into fascinating stories of science with our Saturday speaker series!

Every month a speaker will offer a short talk on an intriguing scientific topic, followed by a Q&A or discussion over complimentary tea and coffee. Afterward, feel free to mingle with other guests and the speaker, or spend time visiting the Museum at CHF.

Admission is free, and no reservations are necessary.

Monday, March 12, 2018 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/>

Tuesday, March 13, 2018 - 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/AfterHours>

Adults Evening

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.

Tuesday, March 13, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN SCIENCE CAFÉ

Regina Baker, assistant professor of sociology, School of Arts and Sciences

"Poverty in the American South"

As a sociologist, Regina Baker studies inequality,

social stratification and families, particularly in the South. Although poverty and uneven development exist everywhere, this part of the country has seen a disproportionate share of the nation's socioeconomic problems. For decades, poverty there has been the highest and most persistent, and the Great Recession only made things worse. In this talk, Dr. Baker will discuss the latest findings from her research, which looks at the role of demographic, economic and racial factors that influence poverty, as well as the uncertainty of future safety nets for America's most vulnerable populations.

Free and Open to the Public.

Saturday, March 17, 2018 at 2:00 PM.
PhACT Lecture.
Topic to be determined

Saturday, March 17, 2018 at 1 pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

St. Patrick's Day Tour, Toasts and Tastes

You don't have to be Irish to be part of this festive St. Patrick's Day tour and reception. Though dead men tell no tales, there are two places that we can learn much about them: the wake-house and Laurel Hill Cemetery. Join us at the latter, as we celebrate the "spirit" of St. Patrick's Day, while honoring the heritage and accomplishments of our proudest Irish souls, now gone to their final reward. 'Tis a festive occasion to be enjoyed by the living, for earth has no sorrows that heaven cannot heal! No St. Patrick's Day would be complete without beer and a hearty meal; enjoy a sampling of both by the Kearney Commissary at the after-tour reception in Laurel Hill's historic Gatehouse.

The event will take place on Saturday, March 17 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$20/person; \$18/students and seniors; or \$17/members. Advance registration is requested. Tickets can be purchased at the door or online. Advanced registration is recommended.

Tour Guide: Jerry McCormick

Tuesday, March 20, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN LIGHTBULB CAFÉ

Dawn Teele, assistant professor of political science, School of Arts and Sciences with a joint appointment in Gender, Sexuality & Women's Studies.

"Nudging Women to Run"

Dawn Teele studies the economic and psychological factors that drive women to seek political office. In a new research project, "Nudging Women to Run," Teele, along with scholars at Rutgers University, Yale University and the University of

California, Berkeley, surveyed alumnae of women's campaign-training programs and is in the process of designing experimental innovations to encourage women to launch political campaigns. A leading authority on women and politics, Dr. Teele's research examines the causes and consequences of voting-rights reform, forms of bias in politics and social-science methodology.

Free and Open to the Public

Tuesday, March 20, 2018 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 23, 2018 at 10am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.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.

The walking tour will take place on Friday, March 23 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse. The cost is \$12/person; \$10/students and seniors; or \$9/members. Tickets can be purchased at the door or online.

Tour Guide: Kerry Bryan

Saturday, March 24, 2018 at 1 pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

Classy Broads and Daring Dames: The Ladies of North Laurel Hill

Laurel Hill Cemetery marks Women's History Month with a program honoring some of their most accomplished broads and dames. What do a Revolutionary War lady patriot, the first burial at Laurel Hill, a great-granddaughter of Benjamin Franklin, and a famous publisher and anti-suffragette have in common? The easy answer is that they are all buried in North Laurel Hill, the Cemetery's oldest section. Join us as we unearth their stories, along with those of other women whose contributions to science and other disciplines have made life as we know it possible. This inspirational walking tour will conclude with a toast to classy broads and daring dames of past... and present.

The tour will take place on Saturday, March 24 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

Tour Guide: Colleen Rumpf

Monday, March 26, 2018 at 7:00 PM at Scoogi's Italian Kitchen & Bar
738 Bethlehem Pike Flourtown, PA 19031

American Revolution Round Table of Philadelphia,

<http://arrtop.org/>

Allen McLane

Allen McLane, born in Philadelphia in 1746, moved to Delaware in the late 1760's, married Rebecca Wells and settled in Duck Creek Crossroads (now Smyrna) where he set up a business making men's leather pants. When the fires of independence began to emerge in the colonies, he quickly became associated with the early leaders of the cause in the Lower Three Counties of Pennsylvania. In the fall of 1775 he decided to join with the Patriots in Virginia and became involved in the Battle of Great Bridge where the military governor of Virginia Lord Dunmore was defeated. Then as the Three Lower Counties were declaring separation from Pennsylvania and Britain, McLane joined with the patriots of Pennsylvania and New Jersey who answered the call to assist General Washington to defend New York against the advancing British.

Join us on Monday, March 26, 2018 as we welcome Tom Welch as he portrays Allen McLane.

Free and Open to the Public.

Tuesday, April 3, 2018 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

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

Free. A reception follows the lecture.

The Searchlight Series: Discussion Topic TBA.

This event is part of Eastern State's ongoing Searchlight Series of events addressing issues in contemporary corrections.

Tuesday, April 3, 2018 - 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/ScienceAfterHours>

Adults Evening

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.

Tuesday, April 3, 2018 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>

First Entrepreneur: How George Washington Built His – and the Nation's – Prosperity

Edward Lengel – military historian and author of *George Washington: A Military Life*

How George Washington's abilities as a businessman informed his leadership as a general and president and set the foundation for the nation's future prosperity.

Open to the Public. Free but a \$10.00 donation is suggested.

Reception follows the lecture.

Monday, April 9, 2018 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/>

Monday, April 9, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Timothy Snyder | The Road to Unfreedom: Russia, Europe, America

Perhaps America's most esteemed Central and Eastern European historian and academic, Timothy Snyder is the author of the no. 1 bestseller *On Tyranny*, *Black Earth: The Holocaust as History and Warning*, *Wall Around the West*, and an impressive array of other books, articles, and essays about that continent's contentious and complicated past. His many honors include the Hannah Arendt Prize, the literature award of the American Academy of Arts and Letters, and the Leipzig Book Prize for European Understanding. He is the Housum Professor of History at Yale, a member of the Council on Foreign Relations, and permanent fellow at the Institute for Human Sciences in Vienna. *The Road to Unfreedom* maps authoritarianism's rapid and alarming resurgence from Putin's Russia west toward the bastions of liberal democracy.

Cost: \$15.00. Tickets on sale January 12, 2018 at 10:00 am.

Tuesday, April 10, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN SCIENCE CAFÉ

Bethany Wiggin, associate professor of Germanic languages and literature and founding director of the Penn Program in Environmental Humanities

Nikhil Anand, assistant professor of anthropol-

ogy

Richard Pepino, lecturer in earth and environmental science

Howard Neukrug, professor of practice in earth and environment science

“Water, Water Everywhere”

In presentations and a panel discussion, a quartet of Penn researchers with diverse backgrounds will share their research and thoughts about water. Nikhil Anand and Bethany Wiggin will present their work on Mumbai and Philadelphia as two chapters in a global story about trade, water and empire; the creation of port infrastructure and the loss of historic wetlands; and the responses of contemporary communities to changing waters, including those rising as a result of climate change. And with the recent crisis in Flint, Mich., as a backdrop, Richard Pepino will discuss his investigation of the risk of lead service lines contributing to childhood lead poisoning in Philadelphia. Howard Neukrug, director of the new Water Center at Penn, will offer a brief introduction to the panel.

Free and Open to the Public

Tuesday, April 10, 2018 -7:00 pm to 10:00pm at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

NIGHT SKIES AT THE JOEL M. BLOOM OBSERVATORY

Join us for an evening of 'out of this world' astronomy activities hosted by Franklin Institute Chief Astronomer Derrick Pitts. 'Night Skies at the Observatory' is a monthly stargazing event connecting you to celestial objects in the night sky including stars, planets, and nebulae using telescopes in Bloom Observatory and at 'Ben's Starlight Lounge' on our 5th floor rooftop observation deck, featuring a cash bar. Build your own experience from any combination of planetarium shows, a live science talk on astronomy or space science, hands-on astronomy activities and continuous telescopic observing all evening (weather permitting). The program is staffed with knowledgeable observers and free star maps are provided.

See website to purchase tickets.

Wednesday, April 11, 2018 at 7:30 p.m. at the Free Library of Philadelphia, 1901 Vine Street, 19103

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

Madeleine Albright | Fascism: A Warning

Former Secretary of State Madeleine Albright's venerable career in public service includes positions on the National Security Council, on Capitol Hill, and as U.S. Ambassador to the United Nations. In 2012, Barack Obama awarded her the Presidential Medal of Freedom. Her books include the memoirs *Madam Secretary*, *The Mighty and the Almighty*, and *Prague Winter*, in which she recounts the story of her Czech childhood under Nazi invasion and Soviet occupation. Drawing upon these experiences, a career spent in international diplomacy and governance, and insights from colleagues around the world, Albright's new book explores the history and resurgence of fascism, the threat it poses to peace, and remedies to

the inequalities that give rise to oppression.

Meelya Gordon Memorial Lecture

Cost: \$15.00. Tickets on sale January 12, 2018 at 10:00 am.

Monday, April 16, 2018 @ 7:00 pm - 9:00 pm at Commonwealth Chateau, Chestnut Hill College, 9230 Germantown Avenue, Philadelphia, PA 19118

The Institute for Science and Religion

<http://www.irands.org>

Darwin and Divinity – Nelson Rivera, PhD

Nelson Rivera is Associate Professor of Theology at Moravian Theological Seminary in Bethlehem, Pa. He has a PhD in Religion from Temple University, and is an ordained minister of the Evangelical Lutheran Church in America. Dr. Rivera's main area of teaching and research is Doctrinal Theology, with pronounced interest on the evolution of Christian doctrine, the use of theological language, and how these disciplines inform the practice of ministry. His published work covers confessional statements of faith, as well as the application of an evolutionary epistemology in theology and the sciences, the latter found primarily in his book *The Earth is Our Home* (Imprint Academic, 2010).

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

Tuesday, April 17, 2018 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, April 21, 2018 at 11:00 AM (Rain Date: May 5) at Philadelphia National Cemetery at 6909 Limekiln Pike, Philadelphia, PA 19138

The Camp William Penn Museum and 3rd Regiment USCT Re-enactors invite you to attend a ceremony to dedicate the new information panel honoring the United States Colored Troops who are buried at Philadelphia National Cemetery.

The new sign, erected by the Veterans Administration celebrates the achievements of the United States Colored Troops of the Civil War, the training camp at nearby Camp William Penn, and those who died in sacrifice to the preservation of the Union. The new sign promises to be a focus for learning and inspiration for years to come. The ceremony will include music, brief speeches, USCT re-enactors, and light refreshments.

Free and open to the public.

For more information, email pt@usct.org or call 215-885-2258.

Saturday, April 21, 2018 at 2:00 PM.

PhACT Lecture.

**2018 - Hip Hop and the Illuminati
Speaker: Rob Brotherton**

Monday, April 30, 2018 at 7:00 PM at Scoogi's Italian Kitchen & Bar

738 Bethlehem Pike Flourtown, PA 19031

American Revolution Round Table of Philadelphia,

<http://arrtop.org/>

General Daniel Morgan

Robert E. Sheridan is a marine geophysicist and marine geologist who studied the North American Atlantic continental margin for over fifty years. He has a bachelor's degree in geology from Rutgers University and a master's and Ph.D. degrees in marine geophysics from Columbia University. He was an associate professor at the University of Delaware when he was part of the team that discovered the USS Monitor wreck off Cape Hatteras. As a descendant of a Union Army veteran with an interest in Civil War history, his work on the discovery and recovery of the USS Monitor allowed him to combine his vocation with his avocation, the love of history.

Join us on Monday, April 30, 2018 as we welcome Robert E. Sheridan who will be presenting a program on his research on General Daniel Morgan.

Free and Open to the Public.

Tuesday, April 24, 2018 at 6:00 PM at World Cafe Live, 3025 Walnut Street, Philadelphia

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

PENN LIGHTBULB CAFÉ

Renata Holod, College for Women Class of 1963 Term Professor in the Humanities, professor of history of art and curator of the Near East Section at the Penn Museum

TOPIC: To Be Announced

Renata Holod has done archaeological and architectural fieldwork in Syria, Iran, Morocco, Central Asia and Turkey and on the island of Jerba, Tunisia. Her most recent project is a collaborative study of the grave goods of a Qipchaq kurgan in the Black Sea steppe of the 13th century. She has co-authored several books on art and architecture in the Islamic world, the focus of many of the courses she teaches at Penn.

Free and Open to the Public

Tuesday, May 1, 2018 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>

Baron Steuben

interpreted by Bill Troppman, Valley Forge NHP Ranger

An evening with Baron Steuben, the brash, brilliant, determined foreigner who transformed the

Continental Army.

Open to the Public. Free but a \$10.00 donation is suggested.

Reception follows the lecture.

Tuesday, May 1, 2018 - 6:00pm - 7:00pm at Eastern State Penitentiary, 2027 Fairmount Avenue, Philadelphia, PA 19130 phone: (215) 236-3300

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

Free. A reception follows the lecture.

The Searchlight Series: Discussion Topic TBA.

Monday, May 14, 2018 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/>

Tuesday, May 15, 2018 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, May 19, 2018

**PhACT Expedition.
At 10 AM**

at Laurel Hill Cemetery •

Tuesday, June 19, 2018 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/>

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Philadelphia Area Lecture Host Websites

This listing is likely incomplete. If there is a site you wish listed or a link is erroneous then please email the Phactum editor at phactpublicity@aol.com

Academy of Natural Sciences

Monday, January 13, 2013 at 6:00 PM-8:00 PM at The Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia 19103

www.ansp.org

American Philosophical Society

, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia

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

Free and Open to the Public

American Revolution Roundtable of Philadelphia (ARRTOP)

at MaGerks Pub and Grill, 582 South Bethlehem Pike, Fort Washington, Pennsylvania

<http://arrtop.com/>

Last Monday of most months.

Free and Open to the Public

Chemical Heritage Foundation

315 Chestnut Street, Philadelphia, PA 19106

<http://www.chemheritage.org>

College of Physicians of Philadelphia

19 South Twenty-Second Street, Philadelphia, PA

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

Delaware County Institute of Science

11 Veterans Square, Media, PA 19063

<http://delcoscience.org>

Delaware Valley Opera Company at the Venice Island Performing Arts Center, located in the Manayunk section of Philadelphia. Turn onto Cotton Street from Main Street and use the Venice Island public parking lot.

www.dvopera.org

2017 Summer Opera Festival

Delaware Valley Amateur Astronomers

in the Radnor Township Municipal Building, 301 Iven Ave, Radnor, Pennsylvania 19087

<https://dvaa9.wildapricot.org>

Free and Open to the Public.

Eastern State Penitentiary

2027 Fairmount Avenue, Philadelphia, PA
First Tuesday of every month.

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

Franklin Institute -

<http://www.fi.edu>

Free Library of Philadelphia (FLOP)

1901 Vine Street, 19103

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

Freethought Society

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

Friends of Valley Forge - first Tuesday of the month

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

Free and Open to the Public.



Humanist Association of Greater Philadelphia (HAGP)

www.HAGP.org

Institute for Science and Religion

<http://www.irands.org>

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

Laboratory for Research on the Structure of Matter - Science Cafe

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

Laurel Hill Cemetery

3822 Ridge Avenue, Philadelphia,

<http://www.thelaurehillcemetery.org>

Nerd Nite -

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

Email us at: nerdnitephilly@gmail.com

Penn Science Cafe & Lightbulb Cafe

at World Cafe Live, 3025 Walnut Street, Philadelphia

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

Free and Open to the Public.

Pint of Science

<https://pintofscience.us/city/philadelphia>

Rittenhouse Astronomical Society

at the Fels Planetarium, The Franklin Institute, 222 North 20th Street, Philadelphia
Astronomy lecture open to the Public.

Third Tuesday of every month.

www.rittenhouseastronomicalsociety.org/

Science on the Hill at St. Joseph's University

at Landmark Americana Tap & Grill at 54th and City Avenue, Philadelphia 19131
at St. Joseph's University

<http://scienceonthehill.weebly.com/>

Free and Open to the Public.

Science on Tap

2nd Monday of each month at 6:00 PM
National Mechanics, 22 S. Third Street, Philadelphia, PA 19106

<http://scienceontapphillly.com/>

University of Pennsylvania Museum

3260 South Street, Philadelphia, PA 19104

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

Wagner Free Institute of Science

1700 West Montgomery Avenue, Philadelphia,

www.wagnerfreeinstitute.org

Free and Open to the Public

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*.

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

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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 2017/18

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The PhACT website is: www.phact.org

'It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.'

~ Sherlock Holmes, *A Scandal in Bohemia*

