

Phactum

"If we knew what we were doing, it wouldn't be called research."

~ A Einstein

The Newsletter and Propaganda Organ of the Philadelphia Association for Critical Thinking

January 2011

editor: Ray Haupt email: phactpublicity@aol.com

Webmaster: Wes Powers <http://phact.org/>

PhACT Meeting - Saturday, January 15, 2011 at 2:00 PM

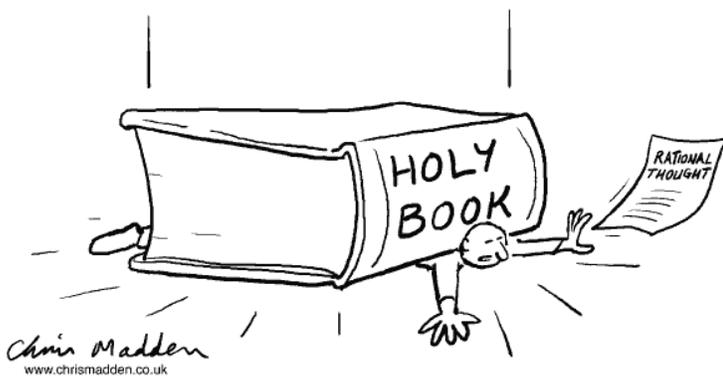
Dr. David Cattell, Chairman of the Physics Department of Community College of Philadelphia, will host Prof. Massimo Pigliucci, a professor at the City University of New York. He will speak on the topic of his new book

"NONSENSE ON STILTS"

At Community College of Philadelphia in room S2-03 of the Winnet Student Life Building, the round building on 17th Street about 500 feet south of Spring Garden Street. Admission is FREE and open to the public.

Massimo Pigliucci is the chair of the Department of Philosophy at CUNY-Lehman College. He is also the editor in chief for the journal *Philosophy & Theory in Biology*. He is known as an outspoken critic of creationism and advocate of science education. Pigliucci writes regularly for *Skeptical Inquirer* on topics such as climate change denial. Has also written for *Philosophy Now* and maintains a blog called "Rationally Speaking." He has debated "deniers of evolution" (young-earth creationists and intelli-

(Continued on page 2)



Cartoon by Chris Madden
<http://www.chrismadden.co.uk>
Used by Permission

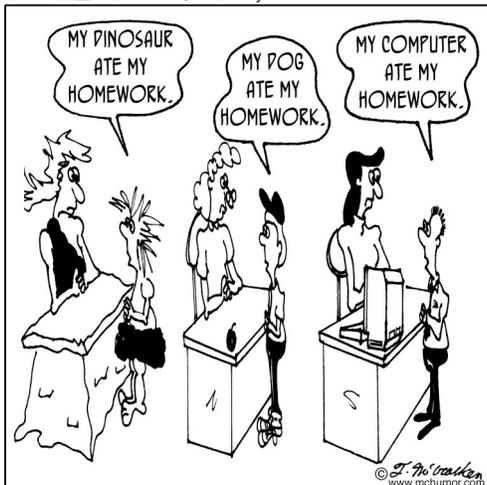
"If 50 million people believe a foolish thing, it's still a foolish thing."
George Bernard Shaw (26 July 1856 – 2 November 1950)

gent design proponents), including young earth creationists Duane Gish and Kent Hovind and intelligent design proponents William Dembski and Jonathan Wells, on many occasions.

Professor Pigliucci serves on the board of New York City Skeptics and on the advisory board of the Secular Coalition for America. He co-hosts its official podcast: **Rationally Speaking**, with Julia Galef. He maintains an internet blog called **Rationally Speaking** which may be found at:

<http://rationallyspeaking.blogspot.com/>

MCHUMOR.COM by T. McCracken



Students excuses through out the ages.

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

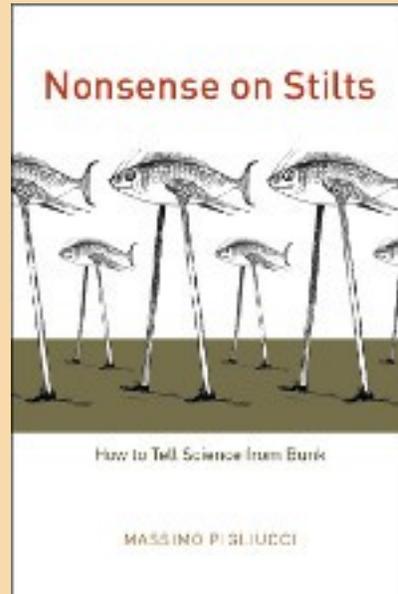
Phactum Table Of Contents

Letters to the Editor	p. 3
Various Ruminations	p. 5
November 2011 Meeting Report	p. 9
Panic Broadcast of 1938 by Don Nigroni	p. 12
How Addiction Lights Up Our Brains	p. 15
By Gary Lange, Ph.D.	
What Promis Hath Life by Paul Schlueter III	p. 18
Of Course it was a Depression	p. 19
By Professor I. Nelson Rose	
Calendar of Events	p. 21

Nonsense on Stilts: How to Tell Science from Bunk

By Massimo Pigliucci

Publisher: University Of Chicago Press (May 2010)
ISBN-10: 0226667863 ISBN-13: 978-0226667867
336 pages Cloth \$70.00 Paperback \$20.00



Recent polls suggest that fewer than 40 percent of Americans believe in Darwin's theory of evolution, despite it being one of science's best-established findings. More and more parents are refusing to vaccinate their children for fear it causes autism, though this link can be consistently disproved. And about 40 percent of Americans believe that the threat of global warming is

exaggerated, despite near consensus in the scientific community that manmade climate change is real.

Why do people believe bunk? And what causes them to embrace such pseudoscientific beliefs and practices? Noted skeptic Massimo Pigliucci sets out to separate the fact from the fantasy in this entertaining exploration of the nature of science, the borderlands of fringe science, and—borrowing a famous phrase from philosopher Jeremy Bentham—the nonsense on stilts. Presenting case studies on a number of controversial topics, Pigliucci cuts through the ambiguity surrounding science to look more closely at how science is conducted, how it is disseminated, how it is interpreted, and what it means to our society. The result is in many ways a “taxonomy of bunk” that explores the intersection of science and culture at large.

No one—not the public intellectuals in the culture wars between defenders and detractors of science nor the believers of pseudoscience themselves—is spared Pigliucci's incisive analysis. In the end, *Nonsense on Stilts* is a timely reminder of the need to maintain a line between expertise and assumption. Broad in scope and implication, it is also ultimately a captivating guide for the intelligent citizen who wishes to make up her own mind while navigating the perilous debates that will affect the future of our planet



Pearl Zane Grey
(1872 - 1939)
American novelist

**"I can write best in the silence and solitude of the night,
when everyone has retired." -- Zane Grey**

You need not be a night owl novelist like Zane Grey to participate in Phactum. We are not currently seeking cowboy novels, but constructive letters to the editor and articles on almost any topic are desired. Consider investigating a topic that interests or bugs you, write it up, and send it in. Suggested improvements to Phactum, letters of opinion, announcement of events, and original poetry are desired. Zane Grey's greatest novel "Riders of the Purple Sage" suggests a topic ... *Salvia dorrii*, also called Ute tobacco sage and Dorr's sage has showy purple flowers. It is a mild hallucinogen when smoked, and is used in Native American ceremonies and Native American herbal medicine. It is native to the western United States, including Utah, and has been identified as the plant Grey had in mind.

Letters to the Editor

Editor: It's occurred to me recently that skeptics, myself included, have not given adequate consideration to the implications of frame theory for skeptical activism. As authors such as George Lakoff have explained, frames are metaphors and narratives embodied in our neural circuitry that shape the way we think. Whenever a particular frame is activated in our brains, it structures the way we think about the subject at hand. The most effective political candidates, for instance, never allow a debate to be shaped by someone whose agenda is opposed to theirs. Whatever the question they're asked, they find a way of responding that stays "on message," activating a frame in listeners' brains that will get them thinking the way the candidate wants. The same principle applies to debates between science and pseudoscience. The key to winning such a debate lies not in attempting to refute every spurious point raised by the other side, but in effectively communicating the scientific view. Explain clearly the concept of natural selection, for instance — while giving a sense of the massive volume of evidence for it — and the handful of purported anomalies touted by creationists will be seen for the insignificant quibbles that they are. The same approach can help decide whether to agree to a debate in the first place. The structure of a debate implicitly puts the interlocutors on an equal footing. If the scientific view already enjoys the most popular credence, this format is disadvantageous to the skeptic. On the other hand, if the pseudoscientific view is more common (as may be true of creationism in the US), then the skeptic who handles it right can use a debate to promote understanding of science. How does debunking fit into this? The term usually refers to an approach that focuses on showing what's wrong with a particular (typically fringe) belief. While this can be fun and useful in certain circumstances, it's

not necessarily the most effective way to promote critical thinking — precisely because, by focusing on the fringe belief, one is activating its frame in the audience or, in some cases, introducing it to people who hadn't previously made its acquaintance. Consider PhACT's most recent meeting, at which Catherine Fiorello gave a talk on "Myths of Education and Child Rearing." While she did make some reference to critical thinking principles (like "correlation is not causation"), her focus was on disputing certain common but ill-founded beliefs and assumptions. This has merit, but what would more directly go to PhACT's stated mission would be a talk on current controversies within mainstream educational theory and child psychology, with an emphasis on how scientific method is being used to help resolve them. Still better would be to follow up with an invitation to the audience to suggest new kinds of experiments to test them, new hypotheses to test, and possibly overlooked confounds to control for. I think such an interactive approach would do more to stimulate the practice of critical thinking than the passive lecture model. To be sure, PhACT meetings have a question-and-answer period, but this isn't the same as actively soliciting participation in the scientific process. Another fruitful sort of meeting would focus on how people can apply critical thinking and other elements of scientific method in their day-to-day lives. I'm interested in starting a group that might meet more frequently for this purpose — a sort of "non-faith community" of people who want to help each other maintain not a particular belief, but rather an open and critical mind, avoiding both deception and self-deception as well as other forms of psychological manipulation.

Eric Hamell
Philadelphia

Editors note: Eric Hamell may be contacted by email at: stripey7@yahoo.com for further discussion of this topic.

Editor: There is a thread on the topic of free will on the PhACT online discussion board (<http://phactforum.org/>). This discussion was started because of interest in the Special Edition of Phactum written by Al Fonda, entitled The Physics of Free Will which may be found at: <http://phact.org/special.php>

Here is my opinion on free will.

If we don't have free will, there are only two ways this condition could exist in the universe:

- 1) the universe is deterministic ---- that is to say that in theory, every reaction of every particle could be calculated from the beginning of the universe to the end of the universe, and my group of particles typing this is in there someplace and was theoretically knowable billions of years ago
- 2) some intelligence has inerrant knowledge of all future actions; giving me no choice but to fulfill those known-to-be-true events (even though I may feel that I made the decisions myself), the mechanism by which such an intelligence has such knowledge is irrelevant, the FACT of the knowledge being the germane issue

I personally believe that I have free will [that 1 and 2 above are not true]. If I were to find out that I don't have free will, I may kill myself in the despondency of finding out I am but an automaton, or maybe I won't kill myself and go along for the ride to find out how it ends, but it is all out of my control, and whatever I do, I would now have an excuse that I had to do it.

My belief in free will necessarily precludes my believing in an omniscient 'anything'.

Alfred Erpel

New Britain, Pennsylvania

Al Fonda responds: Alfred's position is the standard position — which is that our direct experience of willing and acting trumps any predicated governance of the mind by otherwise applicable “laws,” natural or divine. We humans (at least) are exceptional, for no known physical reason. Like Al, most people are content to leave it at that.

And, quite possibly that is for the best. As Eric Kreig said on the Discussion Board, “The whole concept of this is kind of disconcerting to me. ...I think ultimately this personal kind of sanctity is the reason most people would avoid your dialog on this subject.”

If any of you agree with that without having yet read the posted Special Edition, my advice is to continue to [u]not[/u] read it. Critical Thinking may have met its match. The seeming conflict between free will and determinism does prove to be a false conflict; but – speaking as its author – its resolution is rather dehumanizing.

While it was my intent to reduce conflict over competing explanations for our exceptionality – religious warfare included – I think I missed my mark. At this juncture it seems better to simply accept the proposition that we humans [u]are[/u] exceptional, and without worrying about the explanation of this, natural or divine, just be at peace with our fellow exceptional humans.

Al Fonda

King of Prussia, Pennsylvania

Ω Ω Ω

REVERENDFUN.COM COPYRIGHT GCI, INC.



THE SERMON ON 'FREE WILL' WAS WASTED ON LITTLE GEORGE

04-21-1999

Copyright Gospel Communications International Inc.
 Www.reverendfun.com
 Used by Permission

Online PhACT Discussion Board

PhACT does have an online discussion board facility where skeptics, critical thinkers, and others can discuss whatever might be on their minds. At the moment there is some discussion of “**The Physics of Free Will**” which is the title of a scholarly Special Edition of Phactum that was authored by Al Fonda. That may be found at: <http://phact.org/special.php>

All are invited to participate in discussion of that topic or some other topic. You need not be a PhACT member. The discussion board may be found at: <http://phactforum.org/>

Various Ruminations

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

Philadelphia Dental Colleges

Philadelphia had many firsts in the United States but that was not the case for dental colleges. That honor and distinction belongs to Baltimore College of Dental Surgery, founded February 1, 1840, is the birthplace of the Doctor of Dental Surgery degree (D.D.S), and is known as the first dental college in the world. The Baltimore College is now part of University of Maryland. Sixteen years later Philadelphia did catch up when the Pennsylvania College of Dental Surgery (PCDS), was founded in 1856, and was the second dental school to be established in the United States.

In 1863 The Philadelphia Dental College (PDC) was founded and located at 18th & Buttonwood Streets in Philadelphia which so happens to be the location of Philadelphia Community College, our PhACT meeting location. A few years later, in 1878, an affiliated institution, Garretson Hospital for Oral Surgery was founded and was the first facility devoted exclusively to oral and maxillofacial surgery.

Meanwhile, in 1877, the Medical Committee of the Board of Trustees at University of Pennsylvania considered establishing a school of dentistry at Penn. They approached the Pennsylvania College and the Philadelphia College, but both declined the offer. In 1878 the University of Pennsylvania did open the School of Dentistry, the first class having 52 students, half of whom transferred from Pennsylvania School of Dental Surgery.

In 1888 Russell Conwell, a theologian, founded Temple College, "an educational institution intended primarily for the benefit of workingmen." Fittingly, this new institution was in very close proximity to the Wagner Free Institute of Science whose mission at the time, and still is to this day, to expose the common man to science and science education.

In 1907 PDC offered to merge with Temple College after which Temple College became known as Temple University. PDC retained its name until 1913 when it became the Temple University School of Dentistry.

In the early 1900's PCDS was not doing well as they were in financial difficulty. In 1909 PCDS merged with University of Pennsylvania School of Dentistry.

PCDS did have a couple of rather colorful alumni.

Doc Holliday—Philadelphia Dental Student

It so happens that John Henry Holliday, born August 14, 1851 in Griffin, Georgia, enrolled at Pennsylvania College for Dental Surgery at age 19, in 1870. In 1872 he received the degree Doctor of Dental Surgery and moved to Atlanta, Georgia to begin practice with his uncle. A few months later he was diagnosed with consumption, his practice was failing, and he became a gambler, alcoholic, and gunfighter. He had various encounters with the law, mainly for illegal gam-



Doc Holliday's
PCDS Graduation
Photograph, 1872

bling ... In Texas of all places!

In 1877 at Fort Griffin, Texas Doc first met Wyatt Earp. In 1878 Holliday and the Earp brothers became close friends in Dodge City, Kansas. That year Doc Holliday met his long term girl friend, Mary Katherine Horony (1850 – 1940), otherwise known as "Big Nose Kate".

In 1879 the Earp's moved to Tombstone, Arizona, followed in 1880 by Holliday and Kate who, it is rumored, operated a brothel. The infamous "Gunfight at O.K. Corral", the subject of many cheesy movies, occurred in October 1881. Three cowboys were killed in that gun dual followed by several vendetta killings in the months following. Holliday was arrested for murder in Denver, Colorado in May of 1882 but was released for lack of evidence.

Holliday spent the next few years in Colorado and on November 8, 1887 died of tuberculosis at age 36.

Doc Holliday had a famous cousin through marriage, Margaret Mitchell, who wrote the great Civil War novel "Gone With the Wind".

Zane Grey—Philadelphia Dental Student

Pearl Zane Gray was born January 31, 1872 in Zanesville, Ohio, his mother being Alice "Allie" Josephine Zane a descendent of Robert Zane who came to America in 1673 and descendent of Ebenezer Zane who founded Zanesville. His father was Lewis M. Gray, a dentist. The family changed its last name from Gray to Grey and later on the unfortunately named Pearl dropped Pearl to use Zane as his first name.

When Zane was 17, in 1889, his family moved to Columbus, Ohio and he commenced to practice dentistry doing rural home call extractions until the state intervened.

Zane was an ardent baseball player and fisherman and he secured an athletic scholarship to play baseball and study dentistry at University of Pennsylvania. In 1896 he graduated, moved to New York City, set up a dental practice, and began writing. In 1900 he met 17 year old Lina Roth, better known as "Dolly". Dolly came from a family of physicians and was studying to be a schoolteacher. In 1905 they wed and not long thereafter Grey gave up his dental practice to write and go fishing.

Grey was often away from home for months at a time. He fancied himself a ladies man and was quite the bounder and cad. They had 3 children. Dolly managed his literary affairs



Zane Grey, Student at
Univ of Pennsylvania,
1895



**Grey and his tuna fish.
Add celery and mayo.**

while Zane had various other affairs.

Grey wrote many books but is most famous for popularizing the legends of the Wild West, his most famous novel being "Riders of the Purple Sage" in 1912.

Grey was a legendary sports fisherman and held many records, most of which have now been broken, including a 758 pound blue-fin tuna caught off Nova Scotia in 1924.

Zane Grey died of heart failure on October 23, 1939 at his home in Altadena, California. He was

interred at the Union Cemetery in Lackawaxen, Pennsylvania.

Vacation at Chernobyl

The Ukrainian government has recently been encouraging vacations at Chernobyl. We think it is a splendid idea for Spring Break 2011 — plenty of Hot Chicks!

[http://www.foxnews.com/world/2010/12/13/ukraine-open-
chernobyl-area-tourists-1172479551/](http://www.foxnews.com/world/2010/12/13/ukraine-open-chernobyl-area-tourists-1172479551/)

[http://www.scrippsnews.com/content/editorial-take-
chernobyl-vacation-be-power-player](http://www.scrippsnews.com/content/editorial-take-
chernobyl-vacation-be-power-player)

Cosmology

At the November PhACT meeting Professor Dave Goldberg, a cosmologist at Drexel University, discussed long time periods, and long distances, and many new concepts in physics. It is interesting material though rather difficult for laymen to understand. Three of Dr. Cattell's physics students were very interested and did write meeting reports, all of which can be found beginning on page 9.

Meanwhile, in a recent news announcement, scientists claim that the estimated number of stars in the Universe has recently tripled to 300 sextillion. That is: 300,000,000,000,000,000,000,000 or in less awkward notation 3×10^{23} . A difference of 200 sextillion should not matter among friends.

Check out this article from the Harvard Crimson.

[http://www.thecrimson.com/article/2010/12/3/stars-red-
galaxies-dwarfs/](http://www.thecrimson.com/article/2010/12/3/stars-red-
galaxies-dwarfs/)

End of the World

Tom Napier sent this handy and informative little website: <http://www.wecantknow.com/>

The website tells to the second the time of the End of the World which will be on May 21, 2011. Unfortunately it neglects to identify which time zone.

The calculation for rare occurrence has been explained in Phac-



tum (September 2010, page 8).

That date, by the way, is the third Saturday of the month and a PhACT meeting is scheduled, probably the annual luncheon. We will take no chances at this meal—dessert will be served first.

Sylvia Browne

PhACT member Don Nigroni informs us that World Renowned Psychic and best selling author Sylvia Browne is coming to Harrah's Casino in Chester! Come witness first hand the teachings and spiritual insight from one of America's most famous psychics! At 8:00 PM on Saturday April 2, 2011. Ticket prices are: \$35, \$50, \$65 & \$100. Tickets available in the Harrah's Chester Gift Shop, visit ticketmaster.com or by calling 800-745-3000.

[http://www.harrahscchester.com/EventsDetail.do?
detailName=sylvia-browne-
detail&locationCode=CCR#upcoming](http://www.harrahscchester.com/EventsDetail.do?detailName=sylvia-browne-detail&locationCode=CCR#upcoming)

Or You might just wish to save your money.

Vaccines - A promising development

In the July/August 2009 Phactum we reported that researchers at University of Pennsylvania Abramson Cancer Center, led by Dr. Stephen Schuster, were engaged in clinical trials to develop a personalized vaccine to cure or delay the effects of certain types of non-Hodgkin lymphoma. Lymphoma is generally a slow moving cancer that effects the lymph system. Non-Hodgkin lymphoma is a collection of about 30 different cancers of the lymph system.

To generate the vaccines used in their trial, Schuster and his colleagues fused a specific protein from each patient's tumor cells to a carrier to form a substance to attract the attention of immune system. The team used the carrier protein alone as a placebo vaccine.

The clinical trial has been highly successful. When researchers analyzed the patients who received at least one dose of personalized vaccine, they saw a 14-month improvement in disease-free survival, compared to those who received the placebo. The 76 patients treated with the vaccine had a median disease-free survival of 44.2 months, compared to 30.6 months for the 41 patients treated with the placebo. The trial was designed so that two patients would receive the vaccine treatment for every one who received the placebo.

Schuster's team plans to launch a new clinical trial using the same vaccine approach refining their methods by dividing patients at the outset according to certain characteristics of the proteins in their cancerous cells.

A more technically detailed account of this medical development can be found at:

[http://www.uphs.upenn.edu/news/
News_Releases/2010/12/personalized-lymphoma-vaccine/](http://www.uphs.upenn.edu/news/News_Releases/2010/12/personalized-lymphoma-vaccine/)

Vaccines - So What is a Vaccine Anyway?

Have you ever stopped to think about what a vaccine might actually be? I must admit that I have not, until now. To me a vaccine has always been some "stuff" in a liquid in



a hypodermic needle that gets stuck my arm to keep me from getting sick from some disease. I wish that “stuff” had been stuck in my arm when I was in 4th grade to have spared me from whooping cough, otherwise known as pertussis.

I did know that, in general, a vaccine is a solution of killed virus or germs that stimulates the immune system resulting in an increased degree of immunity to the target disease.

From Webster’s Dictionary of 1828 we learn:

VAC’CINE, a. [L. vaccinus, from vacca, a cow.] Pertaining to cows; originating with or derived from cows; as the vaccine disease or cow-pox.

From Websters Dictionary of 1913 we learn:

Vac’cine (?), a. [L. vaccinus, fr. vacca a cow; cf. Skr. vāc to bellow, to groan.] Of or pertaining to cows; pertaining to, derived from, or caused by, vaccinia; as, vaccine virus; the vaccine disease. -- n. The virus of vaccinia used in vaccination. <-- n. any preparation used to render an organism immune to some disease, by inducing or increasing the natural immunity mechanisms.

From the Miriam-Webster 11th Edition Dictionary we learn:

Vac.cine (noun), a preparation of killed microorganisms, living attenuated organisms, or living fully virulent organisms that is administered to produce or artificially increase immunity to a particular disease

I had never considered the part about cows but according to Webster my impressions of what a vaccine is are pretty much on target at the layman’s level of understanding. But the story above about treatment of cancer, specifically lymphoma, does not seem to fit the definition of “vaccine”. Dr. Schuster’s vaccine does not prevent lymphoma and it has nothing to do with killed or attenuated organisms.

The term “cancer vaccine” is slightly more precise but some cancers such as cervical and some liver cancers are caused by virus and the traditional definition is apt. In those cases the “cancer vaccine” prevents the targeted form of cancer.

Dr. Schuster, however, is dealing with an existing cancer and those vaccines, known as “therapeutic cancer vaccine”, are intended to mitigate or cure a cancer by strengthening the

natural immunity systems of the body. This area of cancer research is relatively new and most clinical trials investigating therapeutic cancer vaccines have yielded little success. This particular scientific achievement might well yield a huge beneficial impact in a very complicated and important field of endeavour.

Vaccines - Shingles

Shingles is a rather nasty disease that mainly occurs in older adults who had chicken pox when they were young. Chicken pox is caused by a form of the herpes virus that remains in the body and may re-activate many years later. It is painful and causes severe blistering, rash, itching, and scabs.

Shingles usually disappears as an active disease in a few weeks and drugs are available for treatment. Unfortunately, in some cases, the pain of shingles can last for months or even years. In 2006 the CDC approved a vaccine that can prevent or reduce severity of this disease. It might be well worth while to ask your doctor about that vaccine.

Vaccines - Fight a Plague Computer Game

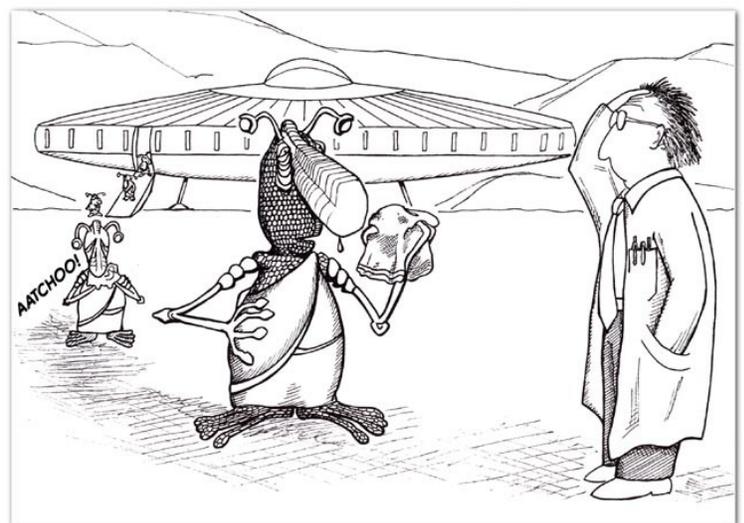
The new vaccine education facility at the College of Physicians of Philadelphia website has an educational interactive game that simulates a small town that experiences a series of infectious disease outbreaks. That can be found at:

<http://www.historyofvaccines.org/content/illsville-fight-disease>

The website for the College of Physicians is:

<http://www.collphyphil.org>

Ω Ω Ω



“You want OUR technology? We actually came here to ask whether by any chance YOUR civilization had managed to come up with a cure for the common cold?”

Cartoon by Nick D. Kim, <http://www.lab-initio.com>
Used by permission.



Mark your calendar for the 2011 Philadelphia Science Festival!

April 15 - April 28, 2011

Programs and exhibitions will take place throughout the city's many neighborhoods, fueled by the best scientific and educational resources the region has to offer--all geared towards making science interesting, relevant, and fun.

Science Carnival

The Festival will open with an outdoor carnival on the Benjamin Franklin Parkway on April 16, 2011. This celebration of sciences will be highlighted by hands-on exhibits, science-themed performances and demonstrations, and family-oriented science entertainment. The Free Library of Philadelphia—a Science Festival partner organization—will host its annual Book Festival on the same day, making the Benjamin Franklin Parkway an unrivaled destination for family-friendly informal learning opportunities.

Neighborhood Science

Science outreach programs will take place in every neighborhood in Philadelphia over the course of the first week of the Science Festival. Through partnerships with each of the large science centers in the city and all partnering colleges and universities, programming will take place throughout Philadelphia so that every city resident has an opportunity in his or her neighborhood to engage directly in a Philadelphia Science Festival event or activity.

Science Conversations

Focusing on direct interactions between scientists and other residents, Science Conversations will feature lecture events, panel discussion, etc. from the city's finest scientists, as well as science discussions from award-winning scientists in untraditional settings such as bars and restaurants.

Stay tuned into the official website at: <http://www.philasciencefestival.org/>

This event is organized by The Franklin Institute in cooperation with many major science, education, cultural, business, and governmental organizations.

Major sponsors are: Dow Chemical Company, University of Pennsylvania, Drexel University, LaSalle University, and University of the Sciences

Core collaborators for this event are:

The City of Philadelphia
The Franklin Institute
The Academy of Natural Sciences
American Philosophical Society
Chemical Heritage Foundation
The College of Physicians
of Philadelphia
Drexel University
The Free Library of Philadelphia
Independence Seaport Museum

La Salle University
Monell Chemical Senses Center
The College of Physicians of
Philadelphia - Mütter Museum
New Jersey Academy for
Aquatic Sciences
Philadelphia Zoo
Pennsylvania Horticultural Society
Philadelphia University
Please Touch Museum

The School District of Philadelphia
Temple University
University of Pennsylvania
University of Pennsylvania Museum
of Archaeology and
Anthropology
University of the Sciences
The Wagner Free Institute of
Science
The Wistar Institute

PhACT Meeting Report(s) - November 2010

Professor Dave Goldberg - "Cosmology and Crackpots"

The November PhACT meeting was well attended by students at Philadelphia Community College. Three of Dr. Cattell's physics students took time to write their views of Dr. Goldberg's presentation and all three are included here. Student participation in PhACT and Phactum are very welcome and appreciated.

Catherine Bergeron

Have you been thinking of quitting your day job to devote all your time to theoretical physics? Do you maintain a website to share your amazing insights with the rest of the world (who just doesn't get it?) You should have come to the November 20th PHACT meeting to hear Dr. Dave Goldberg present "Cosmology and Crackpots." Dr. Goldberg spoke about the hot topics in physics such as Dark Matter, Dark Energy, and the expanding nature of the universe. He also gave examples of some people one might call "crackpots," and gave an explanation of why so many crackpots come to being.

Prior to 1996, Dark Energy was not even a concept. If there were no such thing as DE, 80-90% of the universe's mass would have to be in gas. But when scientists looked at photos of the universe made with x-ray telescopes, which Dr. Goldberg showed us in his power point presentation, it became apparent that the bulk of the mass is not in the gas. Dr. Goldberg presented the theory of DE and DM in a simplified way so the audience could appreciate how scientifically based, and non-crackpot-ish, the theories are.

On the other end of the spectrum of science to unfounded craziness are some real gems. Dr. Goldberg shared some emails he has received from people writing to askphysicist@109.com. He also recommended checking out the websites spacemirrormystery.com and timecube.com. He spoke of the space mirror mystery site in kinder terms, though still emphasized that it is crackpot. As for the time cube site, Dr. Goldberg was less amused. I found out why when I visited it, for it calls for the murdering of "evil ONE teaching educators" in the quest for the truth about the 4 corners of earth experiencing 4 simultaneous days. Weird indeed, and violent.

Dr. Goldberg's explanation for how people get carried away with "science" is based on the media. He showed us examples of newspaper and magazine articles which put a spin on the words of scientists to make a catchier headline. His own article about Einstein published in a newspaper, which he originally titled "Wormholes turn 75," became "Time Travel? Well Maybe." In efforts to keep readers interested, publications are feeding the crackpots. Dr. Goldberg's suggestion is to not read the headline if the article is about something old, and to skip the whole article if it is about a breakthrough discovery.

So before you put in your two weeks notice and claim a domain name, contact Dave Goldberg. But make sure you don't write anything that isn't based on sound evidence, because he might use your email in a future speech.

Said Elmenyawy

Professor Goldberg from Drexel University and the author of "A User's Guide to Universe" started his lecture by presenting the standard model of cosmology. About 95% of the Universe is still unknown and the Universe is made of dark matter and dark energy and is expanding. Dark energy is a hypothetical form of energy that produces a force opposing gravity and is thought to be the cause of the accelerating expansion of the Universe. Dark Matter, according to Professor Goldberg, is a matter not yet directly detected by astronomers but is hypothesized to exist to account for various observed gravitational effects. A mathematical model was created to represent a predictive state how big our Universe will be in the future.

This view of dark energy as being the cause of accelerating expansion of the Universe creates interesting responses as many people are skeptical about this explanation. One of the responses to this view is that dark energy is a created definition that was made up to explain all things that scientists do not understand about the Universe; this argument goes even further by claiming that the mathematical model representing dark energy acceleration was only created to support dark energy's existence. This opinion of a single individual is, most unfortunately, the heart of a public perception of cosmology.

In 1996 the term dark energy was not in existence as there was not any observation done; in 1998, however, the observation made cosmologists accept the concept that there is more to the Universe than ordinary matter and dark matter. The question of public acceptance of the concept of dark energy surfaced almost immediately. General public opinion remains that cosmologists do not know what they are talking about.

The answer to the public's attitude is that the vast majority of people read the popular science press that publishes incorrect information most of the times. In order to get catchy headlines and sell issues of their newspapers and magazines, some journalists get their facts wrong on purpose and repeatedly. As a result, people would read or hear these incorrect theories and would have the same level of understanding the information.

Why do physicists believe the standard model of cosmology? There are a few reasons, among them are Rotation Curves. Galaxies have a certain amount of mass that can be figured out by calculating the rotational speed of stars. Galaxies are made out of dust, stars and dark matter. The Velocity of Galaxies should drop very quickly in distance but it does not, it remains very flat. This fact raises a question about Galaxies missing a lot of mass and where it would go.

Another reason is that the masses of clusters do not add up. To aid with understanding of a mass, Professor Goldberg kindly reminded the audience about General Relativity. From 1919, when the eclipse was observed, the idea started that a light from the star that was lined up with a sun appeared to be reflected. This reasoning would work in reverse by using General Relativity to measure masses.

A third proposed reason is Supernova Explosions. Assuming that the brightness degree of a Supernova is known then the distance to the Supernova can be calculated. This calculation is useful to show how big the Universe is now and how small it was at different points in the past. The possibility to see many more distant objects means that the Universe had more time to change. Among other reasons to believe the standard model of cosmology Professor Goldberg mentioned the Microwave Background and comparison with computer simulations.

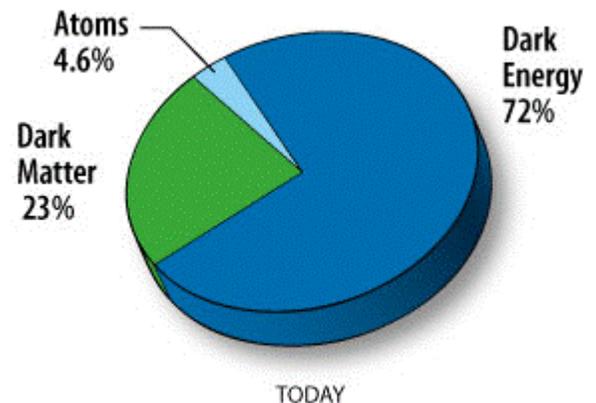
Professor Goldberg showed a few examples of "crackpots" by presenting snapshots of various internet pages with erroneous theories that take a shot at explaining cosmology thus adding to public's misinformation. These web sites, just like the popular science press, included flashy titles like "Galileo was wrong, Church was right", "Space mirror mystery" and others. Professor Goldberg concluded his lecture by expressing his hope to have an observation that would open the public's eyes to reality and clear cosmologists' names.

Sara Snell

Professor Dave Goldberg was invited to the Community College of Philadelphia as a guest speaker for PHACT (Philadelphia Association for Critical Thinking). PHACT focuses on goals to promote scientific inquiry, media responsibility, critical thinking, and science education. It refers to itself as a collection of skeptics and other science minded individuals. The aspect of skepticism that Goldberg presented was the manner in which the general public refuses to believe that the majority of the universe is composed of dark energy and dark matter, and bring attention to strange ideas about space. He spent the majority of the presentation explaining what these things are, and giving evidence of its existence. However, in the introduction and closing statement of the speech a distinction was made between "real science" and "pseudo science". This dichotomy enabled Goldberg to fit the model of ideals of the host association.

Professor Goldberg teaches at Drexel University in the Department of Physics. His research includes theoretical and observational cosmology, gravitational lensing, and popular science writing. He has written "A User's Guide to the Universe: Surviving the Perils of Black Holes, Time Paradoxes, and Quantum Uncertainty," with Jeff Blomquist. He is currently working on a book that is yet to be titled about conspiracy theories and crackpots. He contributes to the blog i09, a science and science fiction website, as the physicist in the column "Ask A Physicist". His most recent contribution to i09 is actually on the subject which he presented on for the PHACT meeting, dark matter and energy.

Professor Goldberg's argument was very well supported. In that there was one main focus, skepticism as it relates to cosmology; he illustrated this by two objectives in his speech, to confirm what the current scientific interpretations are, and to identify anti-scientific rhetoric. He did not directly identify the main point, it was implied. For the body of his speech he used the example of dark-matter and dark-energy. The fact that the majority of the universe is composed of these materials is contentious in the non-scientific community. He began the presentation by showing many comments from his blog that fiercely deny the existence of dark-matter and dark-energy. These comments seemed to be selected for their personal resonance; in that the commenters took personal offence and argued from a position of anger and misinformation. Goldberg proceeded to prove, with the best of his ability and with the given time, the verity of dark-matter and dark-energy. He cited a 1998 study that the universe is composed of 5% normal matter, 21% dark matter, and 74% dark energy.



This graph and description are from:
http://map.gsfc.nasa.gov/universe/uni_matter.html

The following is a brief overview of his arguments :

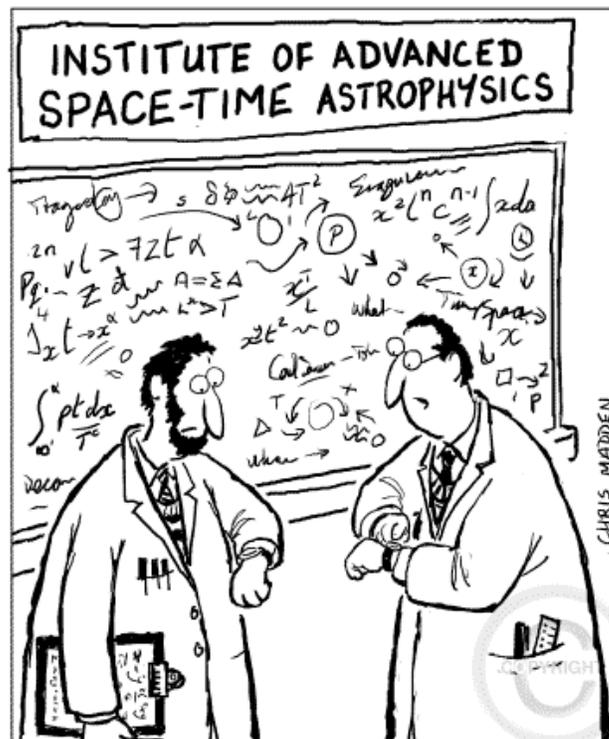
- 1) Rotational curves. According to the math galaxies are missing a lot of mass.
- 2) The Clusters don't add up. This would be due to gravitational lensing. An example of this would be the bullet cluster.
- 3) Microwave background. The WMAP (The Wilkinson Microwave Anisotropy Probe). By making accurate measurements of the cosmic microwave background fluctuations, WMAP is able to measure the basic parameters of the Big Bang model including the density and composition of the universe. WMAP measures the relative density of baryonic and non-baryonic matter to an accuracy of better than a few percent of the overall density.

Professor Goldberg gave a very persuasive for the existence of dark-matter and dark-energy. That would be expected considering that it is one of his fields of speciality.

The only critique that I would give for Professor Goldberg's speech was that the "crackpot" aspect of the presentation seemed underdeveloped. In that the title of the speech was "Cosmology and Crackpots" these crackpots were only mentioned at the very beginning and end of the presentation. The initial crackpots were those in denial of a scientific theory, they were briefly but strongly referred to. The majority of the hour and a half presentation was dedicated to proving the existence of dark-matter and dark-energy. At the very end of the speech, almost as an after thought, he mentioned two very amusing sites "timecube" and "space mirror mystery". He quickly explained the ideas behind these sites and made fun of them. He also announced that his next book would be about false science and "crackpots". That was the full extent of a topic one would assume would be a major aspect of the lecture.

In general Professor Goldberg was a very good public speaker. He knew his audience well and worked the crowd with ease. He strongly supported any claims that he made. His physical presentation and demeanor were suited for the event. He had a calm and comfortable quality that made the audience receptive to what he had to say. I have had little exposure to cosmology and feel as though I learned significant information from his lecture. Professor Goldberg was very scholarly and interesting. Considering that only one aspect of his lecture was underdeveloped, the presentation was engaging, informative, and well executed.

Ω Ω Ω



I can never remember either.
Is it 'Spring back, fall forward'?

Cartoon by Chris Madden
<http://www.chrismadden.co.uk/moon/jigsaw.html>
 Used by Permission

Reactions to the Panic Broadcast in Philadelphia and Metro NYC

By Don Nigroni

At this time martial law prevails throughout New Jersey and eastern Pennsylvania.

On Sunday, Halloween Eve, October 30, 1938, the

Mercury Theatre on the Air performed a dramatization of the H. G. Wells 1898 novel *The War of the Worlds*. That show is the most infamous radio program ever aired and became known as the Panic Broadcast. In the radio play, the Martians initially land on the fictitious Wilmuth farm in the very real hamlet of Grover's Mill, New Jersey. They then proceed north to devastate New York City while sowing fear among both the characters in the play and those hearing of the fake invasion, either directly or by word of mouth. Based on newspaper accounts at the time, the police, radio stations and newspapers apparently received at least tens of thousands and perhaps hundreds of thousands of calls in response to the show. Thousands reportedly went outside, some apparently to see what they could of the bogus attack and others presumably to find out what others knew about it.

Below are excerpts taken from the radio script that was first published in *The Invasion from Mars* (1940) by Hadley Cantril and from newspaper reports. These passages can be used to correlate events that happened in the drama with those said to have occurred near the phoney war zone in Philadelphia.

According to the radio play, the Martians at Grover's Mill, only 45 miles by car from Philadelphia City Hall, killed at least 40 people. But the drama did not indicate that they would head north until after they annihilated around 6,880 state militiamen at Grover's Mill later on in the program. And Philadelphians might also have been concerned that their city might be overwhelmed with refugees fleeing from the Martians and thereby creating critical shortages of food

and other essential supplies.

The Panic Broadcast:

ANNOUNCER TWO: Ladies and gentlemen, I have a grave announcement to make. Incredible as it may seem, both the observations of science and the evidence of our eyes lead to the inescapable assumption that those strange beings who landed in the Jersey farmlands tonight are the vanguard of an invading army from the planet Mars. The battle which took place tonight at Grovers Mill has ended in one of the most startling defeats ever suffered by an army in modern times; seven thousand men armed with rifles and machine guns pitted against a single fighting machine of the invaders from Mars. One hundred and twenty known survivors . . . Communication lines are down from Pennsylvania to the Atlantic Ocean. Railroad tracks are torn and service from New York to Philadelphia discontinued except routing some of the trains through Allentown and Phoenixville. Highways to the north,

south, and west are clogged with frantic human traffic. Police and army reserves are unable to control the mad flight. By morning the fugitives will have swelled Philadelphia, Camden and Trenton, it is estimated, to twice their normal population.

At this time martial law prevails throughout New Jersey and eastern Pennsylvania.

The Gettysburg Times, Gettysburg, Pennsylvania, October 31, 1938:

Some New York and New Jersey students at the University of Pennsylvania, in Philadelphia hastily



Photo of WPA actress Caroline Cantlon, above left.
New York Daily News, October 31, 1938

packed their belongings, prepared to rush to "beleaguered" relatives.

The city hall switchboard was swamped with calls. (referring to Philadelphia)

The Daily Courier, Connellsville, Pennsylvania, October 31, 1938:

New York police reported that they handled thousands of calls even while the program was on the air. Newark, Jersey City, Trenton, Philadelphia, and other cities within close range of the focal point of the "invasion" were equally swamped (sentence ending period missing)

Tyrone Daily Herald, Tyrone, Pennsylvania, October 31, 1938:

Thousands of men, women and children ran screaming into streets or huddled in basements of homes praying for deliverance from the interstellar "invaders." Police officials, newspapers and local radio stations were deluged with approximately 12,000 calls from hysterical radio listeners. (referring to Philadelphia)

In many Philadelphia neighborhoods, families packed their belongings for hasty flight.

Below are excerpts from the radio script and from newspapers relating what took place in the drama with what was reported to have happened in the direct path of the fake invasion in the metropolitan New York City area.

In the radio play, the Martian war machines crossed the Passaic River around the Pulaski Skyway, which connects the two Jersey cities of Newark and Jersey City, and some people in the latter metropolis were reported to have gone outside to see what they could of the bogus invasion.

The Panic Broadcast:

COMMANDER: Enemy now turns east, crossing Passaic River into the Jersey marshes. Another straddles the Pulaski Skyway. Evident objective is New York City.

The New York Times, October 31, 1938:

Scores of persons in lower Newark Avenue, Jersey City, left their homes and stood fearfully in the street, looking with apprehension toward the sky. A radio car was dispatched there to reassure them.

When urged to move into open spaces because poisonous black smoke was said to be pouring into Newark from the Jersey marshes, more than 20 families in the Clinton Hills section of Newark were said to have created a traffic snarl. Faces were evidently covered with wet handkerchiefs or towels presumably for protection from the dreaded toxic smoke. Fifteen of them were reportedly treated at St. Michael's Hospital for shock. This was one of the most dramatic responses to the performance.

The Panic Broadcast:

OPERATOR THREE: This is Newark, New Jersey Warning! Poisonous black smoke pouring in from Jersey marshes. Reaches South Street. Gas masks useless. Urge population to move into open spaces . . . Smoke now spreading over Raymond Boulevard

The New York Times, October 31, 1938:

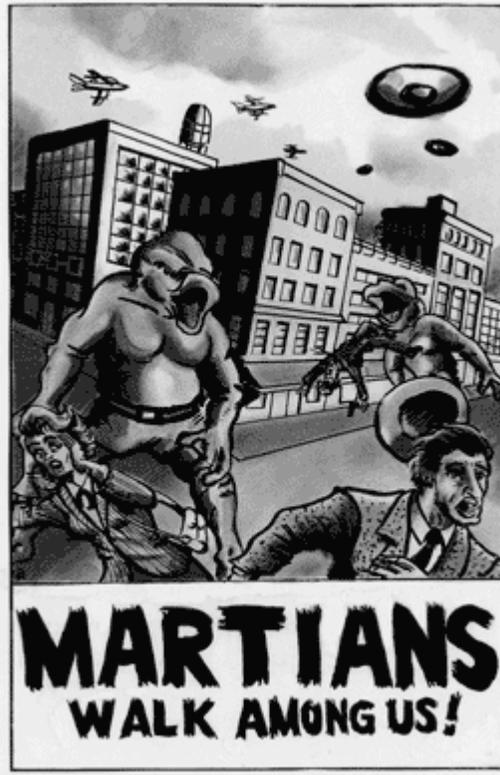
In Newark, in a single block at Heddon Terrace and Hawthorne Avenue, more than twenty families rushed out of their houses with wet handkerchiefs and towels over their faces to flee from what they believed was to be a gas raid. Some began moving household furniture.

Then five Martian war machines were said to have crossed the Hudson River and entered Manhattan. And in response to this part in the program, two small groups of 30 and 12 people in Harlem evidently rushed into local police stations and hundreds of people were said to be milling about in Manhattan. Also, a WPA actress, upon hearing of smoke in Times Square, reportedly hurried from her abode, fell down, broke her arm and bruised her

knees. A photograph of said actress with her arm in a cast and sling appeared in various newspapers, including on the front page of the October 31, 1938 issue of the *New York Daily News*.

The Panic Broadcast:

ANNOUNCER: Enemy now in sight above the Palisades. Five great machines. First one is crossing river. I can see it from here, wading the Hudson like a man wading through a brook A bulletin's handed me Martian cylinders are falling all over the country. One outside Buffalo, one in Chicago, St. Louis . . . seem to be timed and spaced Now the first machine reaches the shore . . . He waits for the others . . . This is the end now. Smoke comes out . . . black



smoke, drifting over the city . . . It's reached Times Square. People trying to run away from it, but it's no use. They're falling like flies. Now the smoke's crossing Sixth Avenue . . . Fifth Avenue . . . 100 yards away . . . it's 50 feet . . .

The New York Times, October 31, 1938:

Harlem was shaken by the "news." Thirty men and women rushed into the West 123d Street police station and twelve into the West 135th Street station saying they had their household goods packed and were all ready to leave Harlem if the police would tell them where to go to be "evacuated." One man insisted he had heard "the President's voice" over the radio advising all citizens to leave the cities.

When I got to the street there were hundreds of people milling around in panic. Most of us ran toward Broadway and it was not until we stopped taxi drivers who had heard the entire broadcast on their radios that we knew what it was all about.

The Clearfield Progress, Clearfield, Pennsylvania, November 3, 1938:



Orson Welles (1915 - 1985) in the 1938 radio broadcast of War of the Worlds
latimesblogs.latimes.com

A real casualty of the make-believe "war" broadcast by the Mercury Theater of the Air was Caroline Cantlon, above, WPA actress. Hearing from her radio an announcement of "smoke in Times Square," she started to rush downstairs. She fell, suffering the broken arm and bruised knees shown in the photo.

Many people in many places were scared or fooled by the radio broadcast and that fact was, at the time, attributed to ignorance and a lack of critical thinking abilities.

Don Nigroni received a BS in economics in 1971 from Saint Joseph's University and a MA in philosophy from Notre Dame in 1973. He retired in 2007 after working 32 years as an economist for the US Bureau of Labor Statistics.

Ω Ω Ω

George Orson Welles was born in Kenosha, Wisconsin on May 6, 1915. Orson Welles's 1941 feature film *Citizen Kane* is thought by many critics to be the best film ever made in America. Welles started on the stage at an early age, and by his early 20s had joined with John Houseman to form The Mercury Theater, a live theater (and later radio) production group. On radio, Welles provided the voice for Lamont Cranston, aka The Shadow.

On Halloween of 1938, Welles directed a radio version of the H. G. Wells story "The War of The Worlds" that unintentionally fooled many people into thinking Martians had invaded Earth. Welles became nationally famous, and at age 25 was brought to Hollywood by RKO Studios to make movies. His first feature was *Citizen Kane*, the tale of a tyrannical newspaper tycoon who was widely assumed to be patterned after publisher William Randolph Hearst. The film was hailed for its innovative techniques and extremely stylish visuals, but was not a hit at the box office, with Hearst using his clout to help quash it. Welles went on to make other movies, including *The Magnificent Ambersons* (1942), *The Lady From Shanghai* (1948) and *Touch of Evil* (1958), but he battled with studio executives and became known for having difficulty finishing projects. Welles also acted in dozens of movies, including *The Third Man* (1949) and *The Muppet Movie* (1979). In his later years he worked mostly in television and as a narrator. On October 10, 1985 Welles died of a heart attack in Hollywood, California.

Some Orson Welles Quotes

[on *Citizen Kane* (1941) being colorized] "Keep Ted Turner and his goddamned Crayolas away from my movie."

"I don't pray because I don't want to bore God."

"I have a great love and respect for religion, great love and respect for atheism. What I hate is agnosticism, people who do not choose."

[About Nostradamus' ability to predict the future] "One might as well make predictions based on random passages from the phone book."

[commenting on pop idol Donny Osmond] "He has Van Gogh's ear for music."

"If you want a happy ending, that depends, of course, on where you stop your story."

"Man is a rational animal who always loses his temper when called upon to act in accordance with the dictates of reason."

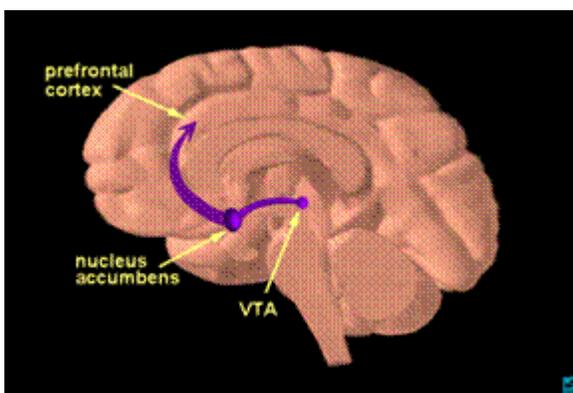
How Addiction Lights Up Our Brains:

Reviewing how the Neurotransmitters Dopamine and Glutamate affect Addiction

By Gary Lange Ph.D., MFT, NCGC

When we eat great lasagna, get a warm hug or compliment, use a drug or addictive behavior, or even anticipate one of these: our brain lights up! What happens in the brain when we experience pleasure—including the pleasure induced by addictive behavior? Briefly, three core areas of the brain and two neurotransmitters play a role in eliciting the pleasure or the “high”. Addictions to alcohol, drugs, gambling and problematic behaviors, interrupt the normal balance of the brain and neurotransmitters. They can have lasting negative effects on the addicted person, but with recovery and abstinence the brain can re-set itself so that they can again find joy and fulfillment in things other than the addictive behaviors. Each day we are learning more and more about how the neurotransmitters in our brain affect our behavior. The way it “lights up our brain” can be quite complex, but for simplicity sake, this article will look at just two neurotransmitters and three parts of the brain.

Three areas of the brain affected by addiction are the Ventral Tegmental Area (VTA), the prefrontal cortex, and the Nucleus Accumbens (NA). (See illustration) The VTA



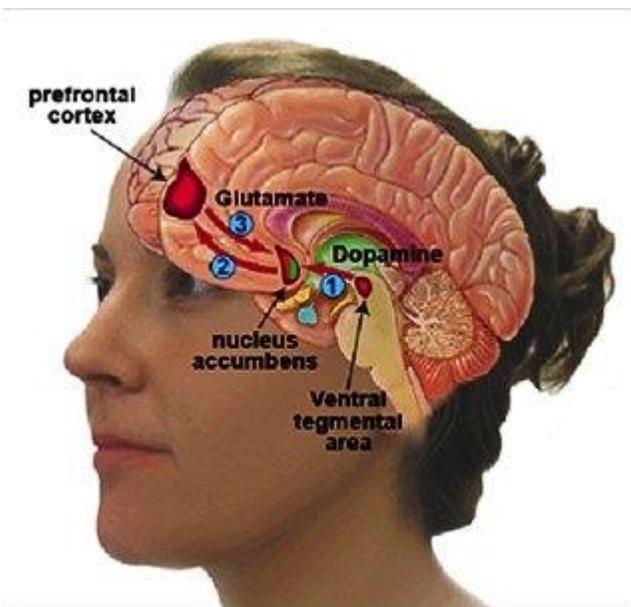
and NA are parts of the midbrain. They are the ancient survival areas of the brain that store information at the subconscious level. The midbrain is responsible for survival and moment-to-moment living. It does not think or make decisions; it is a life-or-death processing station for signals detected through the five senses. It primarily focuses on the "eat, kill, and sex" survival mechanism. Most importantly, it

is the “pleasure center” of our brains. The midbrain holds involuntary memories that are activated by our senses, which are woven together into perceptions. Ordinarily, the prefrontal cortex keeps the midbrain in check. However, with addiction, the midbrain becomes more powerful than the prefrontal cortex at guiding behaviors. Addictive chemicals or behaviors stimulate the unconscious survival centers in the midbrain. With addiction, the communication between the prefrontal cortex and the midbrain is impaired. The addicted person reacts to what feels good at the moment without any concern for the consequences. Therefore, in addiction, a new survival hierarchy is created, instead of eat, kill and sex, the hierarchy starts with the addiction or the drug first and then is followed by eat, kill and sex.

When we smell the roses, have a great meal or an intimate encounter, the neurotransmitter dopamine is released in the VTA and NA which are located in the midbrain area between our ears. This dopamine is sent to the NA, which, “measures” the degree of pleasure of the dopamine. If the level of dopamine is high, the pleasure experienced will be high. When stimulated by dopamine, the NA secretes another neurotransmitter, glutamate, which stimulates the prefrontal cortex. This part of the brain remembers what led up to this pleasurable experience or “high”. Our prefrontal cortex at our forehead “lights up” when these neurotransmitters are secreted and we delighted and pleased. Since glutamate is the most abundant excitatory neurotransmitter, it instructs our cortex to remember pleasant experiences or tastes and screams: “Remember this Baby!” That is, glutamate locks the pleasurable experience into the memory centers of our brains. In simple words, the brain is learning and remembering our great and not so great experiences.

Now enter an addictive behavior or addictive use of a chemical. Again, the VTA releases dopamine and stimulates the NA to perceive and judge the degree of pleasure and in turn secretes glutamate. Dopamine could be symbolized as a green hose filled with excitatory dopamine that floods the NA (step 1 in the figure below) and then glutamate is released in the brain. Remember glutamate is the

neurotransmitter that helps lock the drug or addictive “high” into memory. Glutamate can be thought of as a red hose that floods the prefrontal cortex imprinting very powerful memories. When glutamate stimulates the cortex, it responds “Oh baby, I remember this one!” In addiction, the excess glutamate in the cortex loops back in a harmful cycle between the prefrontal cortex and the NA (steps 2 and 3 in figure below), triggering drug seeking behaviors at the expense of naturally rewarding behaviors. This cycle is depicted in the following figure.



We already know that pleasurable things cause the brain to produce dopamine. But drugs and addictive behaviors release far more dopamine than the brain was ever meant to handle. Drugs fool the brain into feeling great at first, and then the drug is viewed as necessary for survival; even before proceeding with the normal hierarchical response of survival: eating, killing and sex.

Even the “expectation” of a reward like a hug or a drug can trigger dopamine release in the VTA. The brain is out of balance and mind-altering substances slowly rob the cortex of so-called “synaptic plasticity”. When this happens the neurotransmitters do not communicate well with each other. The loss of this synaptic plasticity triggers many addictive urges. Because the synapses are damaged, the addicted person has problems resisting these urges and may relapse.

Now for the addict, the drug IS survival. Even chain smoking and the use of caffeine can trigger the harmful dopamine \leftrightarrow glutamate cycle that can feed the addiction. After the dopamine is sent up to the NA, glutamate, another neurotransmitter locks the drug or addictive experience into memory. And if this isn’t bad enough, drugs wipe out the dopamine \leftrightarrow glutamate connection and balance. This

detrimental cycle becomes stronger and stronger with repeated addictive behavior creating “super-duper memories” which can last for many years after abstinence and leave the addict vulnerable to relapse.

In addiction, the green dopamine and red glutamate neurotransmitters flood the craving brain. Addictive behaviors like gambling, eating, and the use of drugs “increase the reward threshold for these behaviors and desensitize the brain to rewards obtained from normal biological cues. This helps explain why addiction seeking behavior can take over a person’s life and can cause them to abandon their friends, families, jobs and even engage in illegal behaviors to obtain the drug.” (NeuroScience) The harmful dopamine \leftrightarrow glutamate imbalance deadens the pleasure obtained from normal rewards such as food, water, and intimacy. The addict is only able to feel pleasure, or perhaps only feel normal, when using the drug or engaging in the addictive behavior. The inability of the addict to feel pleasure can result in the depression associated with the withdrawal syndrome. To avoid the withdrawal, the addicted person continues engaging in the addictive behavior.

Some still question whether or not alcohol and chemical dependency are a choice or a disease. The disease model is supported by the following observation. If an alcoholic is offered a drink and told that if they drink it they will be shot and killed, they may not drink it at that moment, yet they may still crave it in their brain. The NeuroScience article continues, “Drugs increase the activity of the reward pathway by increasing dopamine transmission. Thus addiction is truly a disease of the brain. Increased dopamine over-stimulates the normally calm, balanced NA into eliciting rapid dopamine and glutamate reactive and strengthening mechanisms.” The normal “green hose \leftrightarrow red hose” cycle is altered and maintained through repeated use of the alcohol or the addictive behavior. Furthermore, as noted earlier, addiction affects the prefrontal cortex, the area of the brain that is used in decision making. Those who recognize addiction as a disease admit that the behaviors of addicts may be seen as frustrating and sometimes amoral, but they are symptoms of the addiction and not the causes of the addiction.

The disease model of addiction was formulated over 100 years ago. In a wonderful new DVD lecture, Dr. Kevin McCauley explains that in order for a disease to exist there must be a defect in an organ, and as a result, there must be symptoms of this defective organ. For example, if someone breaks a leg, the femur is broken resulting in pain and trouble walking. A diabetic has problems with insulin release from the pancreas which can cause blindness and bad circulation. Similarly in addiction, the affected organ is the midbrain, the defect is stress, and the symptoms are loss of control, craving, and persistent use despite adverse consequences. Dr. McCauley proposes that addiction is, “Pleasure

Unwoven” because there is a defect in the reward process of the brain.

Drugs and addictive behavior fool the brain into feeling great at first, and then the drug/behavior is viewed as necessary for survival. Remember dopamine is the chemical of pleasure. It tells us when a reward is better than expected. If it is less than expected, less dopamine is released. Again, addiction impairs the brain and the balance between the “green dopamine and the red glutamate hoses” filled with neurotransmitters. If the brain is out of balance, emotional attachments and decision making are invisible to the addict. When the frontal cortex fails, the addicted person's prior commitment to quit, memory of past use, love of family, and knowledge of punishment are all invisible to them. This involves denial and a damaged brain. The craving disease process is an intense, emotional experience.

We know the most about the effects of alcohol and drugs on the brain. Other addictions like gambling, sex, food, co-dependency, internet games and other addictive behaviors also “light up the brain”. Just ask the person who is repeatedly getting high on it! Abstinence from the chemical or behavior allows the brain to recover and return a balance between the green dopamine \leftrightarrow red glutamate neurotransmitters. Stress and life pressures test this balance and can cause cravings. Even the expectation of a reward from a hug or a drug can trigger the dopamine release. The brain is out of balance and mind-altering substances slowly rob the cortex of its synaptic plasticity or flexibility. When this happens the green \leftrightarrow red neurotransmitters do not communicate well with each other. The loss of this synaptic plasticity triggers many addictive urges. Because the synapses are damaged, the addicted person has problems resisting these urges and may relapse.

Involvement with healthy, supportive people who have had similar experiences helps speed up the recovery process. People with addictive backgrounds must expand their lives

much beyond one or two things that bring them pleasure. Treatment for addiction involves much more than just abstinence. Multiple healthy behaviors, psychotherapy and supportive people in programs like 12 step groups decrease stress and cravings. With treatment, the brain's pleasure centers can re-set themselves and balance the green dopamine \leftrightarrow red glutamate neurotransmitters. Addicted persons can recover and live full, happy, productive and serene lives.

References:

- Neuroscience Technical Bulletin, 2010, “Glutamate and Addiction, Issue 29; www.neurorelief.com
- McCauley, Kevin, 2009, “Pleasure Unwoven” DVD, Institute for Addiction Study
- Sinicola, R., and Peters-Strickland, T. (2006). Basic psychopharmacology for counselors and psychotherapists. Boston: Allyn and Bacon

Gary Lange, Ph.D. is a licensed Marriage and Family Therapist in private practice in Rancho Mirage, CA. He holds a National and California Certification as a Gambling Counselor and is Chair of the Training Committee for the California Council on Problem Gambling. Dr. Lange supervised the Family Program at the Betty Ford Center where he completed his dissertation on the recovery symptoms/patterns of family members. Additionally he is a Certified Addictions Specialist and has been a professor of Psychology with Cal State University, San Bernardino for the past fifteen years. Dr. Lange has done numerous professional presentations on problem gambling as well as the quarterly trainings for counselors seeking their Certification as a Gambling Counselor. Past topics included, “You Bet Your Life”, “When Luck Runs Out”. He has published articles for The Counselor, The Therapist magazines and is currently writing a book for treating families of gamblers. GaryLangePhD.com

Ω Ω Ω

"The unfortunate thing about this world is that good habits are so much easier to give up than bad ones."

Somerset Maugham

"How use doth breed a habit in a man!"

William Shakespeare

"Habit is habit, and not to be flung out of the window by any man, but coaxed downstairs a step at a time."

Mark Twain

"We cannot, in a moment, get rid of habits of a lifetime."

Mahatma Gandhi

"The chains of habit are generally too small to be felt until they are too strong to be broken."

Samuel Johnson

"Every form of addiction is bad, no matter whether the narcotic be alcohol or morphine or idealism."

Carl Gustav Jung

"What Promise Hath Life?"

by Paul Schlueter III

Law and Logic are not necessarily the same thing. It's tough to have had any dealings with the legal system (in any of its several branches, such as civil, criminal, probate, etc.) without developing some skeptical response towards some of the presumptions and precedential rules that pervade the practice of law. Nearly everyone to ever step into a Courtroom has some story to tell about some aspect of the law that seemed to make no sense.

At the moment, I refer to the idea essentially at the root of "Wrongful Death" actions: It is legally presumed that, but for the cause of the "untimely" death, the victim would have lived their remaining life fully and productively, contributing only positively to the lives of their family members and associates, earning an income commensurate with their current vocational status (and continually earning raises until retirement), and so on.

I just saw the story about a man who allegedly shot, and killed several people before killing himself (for all its havoc, still a situation occurring frequently enough to appear in the news nearly every month). In typical fashion, a few of the victims' family members were briefly interviewed, so they could say on camera: how they felt that they had been "robbed" of the time they could have had with the victims. It's that presumption I call into question now.

In point of fact, Life makes NO promises. Insurance companies can profitably operate by playing the statistical game, betting how many years you're likely to live (and pay premiums) against the benefits they'll have to pay out at the time you actually die. Still, statistics only really function in the large scale, leaving the actual experiences of individuals just as unpredictable as ever. The victim of impending murder MIGHT live another 50 years if he can escape the current attack, or he may flee straight into the path of a speeding truck. If the killer could be stopped by some time-traveling cop (or the hand of a guardian angel), there's no guarantee that the victim won't choke to death on supper, slip in the tub and drown, or die in a fire after falling asleep while smoking. The potential hazards to life are innumerable, and they multiply as you consider longer potential periods for them to occur.

So here's the point: YOU HAVE ONLY THIS VERY MOMENT, and there's no guarantee beyond that! You, I, and anyone either of us knows could meet the End in the next minute, hour, or day, You have no guarantee that I'll ever write another of these articles, nor may I rely on your ever reading another, so if either of us is missing from the picture next time, we logically have no justification to claim that we've been "robbed," have we?

Yet, we all want to believe that things will remain the same (or get better) for the indefinite future. That's why many people purchase Life insurance, so that their dependants can receive financial help after their death (and twice as much if the death is "accidental!") In our mutual self-delusion, we have created a body of Law that supports the irrational notion that one person can "rob" another of a future neither can possibly know. Even the phrase "untimely death" makes no sense from a rational perspective, since none of us can truly know when our death is truly due.

And, what of the potential for "the worst" to happen? Suppose that I'd been killed in a hunting accident, somewhere in the weeks preceding the 1985 murder of which I stand convicted? Suppose I had died riding-my motorcycle, or been killed when I was severely beaten in a fight, about six months earlier? Any of those scenarios might readily have interceded in the killing I committed, right? So, had I died in such an event, would my family have been right to claim in Court that they had been robbed of my support and companionship (let alone the humiliation and worry my later conviction would have caused them)? Would my victim's family have owed some bounty or reward to my killer? What if, despite my earlier death, my victim were STILL to be discovered murdered, without witness or forensic solution? And who can reliably predict what life she might have lived, had she survived? Can you see how confounded such presumptions of future knowledge become, when actually considered in hindsight?

I'm making two points here. The first is that Life Hath NO Promise, so in between planning/preparing-to make your future better, and providing for the futures of your loved ones after you've died, make sure to appreciate each moment you have, and to LIVE life to its fullest while you have it to enjoy.

Second, just because the Law, your Culture, or your Belief tells you you're entitled to something; you can't necessarily equate that with rational, logic-based fact. Even though our culture supposedly operates on the Rule of Law, the "right" outcome isn't guaranteed, "justice" depends on your point of view, and history is written by the victors. Living as a critical thinker and skeptic demands that each of us somehow come to terms with those realities.

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

Gambling and the Law®:
Of Course It Was a Depression
By Professor I. Nelson Rose

**“Buy when there is blood in the streets, even if the blood is
your own.” ~ Baron Nathan Rothschild**

© Copyright 2010, all rights reserved worldwide.

Gambling and the Law® is a registered trademark of Professor I Nelson Rose, www.GAMBLINGANDTHELAW.com

There is a generally accepted definition of an economic recession – a decline in gross domestic product for two consecutive quarters. But people don't agree on what is an economic depression until years after the fact.

There is a difference, like the distinction between neurosis and psychosis. A neurotic may have problems, even severe, distressing ones. But a psychotic has at least temporarily lost touch with reality.

The legal gaming industry did, indeed, face a psychotic global economy.

Take, for example, Penn National Gaming. In mid-2008, Penn Gaming was in the final stages of being acquired, when banks decided to cut off all financing for corporate takeovers. But Penn Gaming's lawyers had done a great job writing in protections. In the Mini-Depression, the banks panicked, and gave Penn Gaming \$1.475 billion to not buy the company. Half of that was cash to get out of the deal: literally \$700 million for nothing.

But the impact of the Mini-Depression on Penn Gaming was not over. The stock market reacted to the banks' backing out of the buyout by driving the price of Penn Gaming's common shares down from the mid-\$40s to \$11.82. With about 90 million shares outstanding, this gave the company a market capitalization of \$1 billion: an unreal valuation for a company making money, with little debt and a treasure chest of more than \$1.4 billion in cash.

Unlike a recession, a depression is worldwide. In the depths of the Mini-Depression, January 2009, the Bank of England cut its interest rate to 1.5%, the lowest rate in its 315 year history. The situation was even worse in the U.S., where the yield on three-month treasury bills actually went negative: In December 2008, investors were willing to pay the federal government to hold their money, rather than risk putting it in banks.

Economic depressions have immediate impacts on gaming law. I have had more than one large U.S. investor hire me to advise them about bankruptcy procedures – in Macau. Gaming companies are so international that bondholders of American casino companies wanted to know about loans secured by property in Asia.

A depression is marked by deflation. Sellers become desperate; prices drop below cost. According to the Las Vegas Advisor, its “annual July 2009 survey of room rates in Las Vegas turned up an incredible 65 casinos with rates

below \$50, including 16 with rates below \$20/night.” Some Las Vegas casino/hotels were actually giving away rooms for free, for local residents.

In a depression, virtually all business dries up. Atlantic City casino gross operating profit fell 45.8% in the fourth quarter of 2008.

In fact, by every measure, the Mini-Depression was the worst downturn since gaming was made legal in Nevada in 1931: average room rates, visitor volume, convention attendance and total revenue have plummeted. The Las Vegas Convention and Visitors Authority released a report in March 2010 that average visitor spending on food and drink per trip in 2009 was \$250.32, down from \$273.39 in 2008; shopping was \$101.97, down from \$121.90; \$39.87 for shows, from \$51.64; and the average gambling budget dropped from its peak of \$651.94 in 2006 to \$531.98 in 2008 to only \$481.57 last year.

Whether or not gaming ever was recession-proof is somewhat irrelevant. In a depression nearly everyone loses. Plus, a company that makes a majority of its revenue from non-gaming sources, such as expensive restaurants, designer shops and overpriced Cirque du Soleil shows, is more susceptible to cutbacks in disposable income.

Internet gambling is a much better test of the old adage, because it is pure gaming. And it appears sign-ups did continue to increase, as players decided to bet from home rather than spend money on travel. The industry is young, so downturns are reflected in slower growth, rather than actual drops in revenue. Plus, it was hit by such major traumas as the UIGEA, which make year-over-year comparisons difficult.

Still, it would be interesting to know where i-gaming would have been if the housing bubble had not burst, or even if this had been a normal recession.

Things were different with land-based gaming, a mature industry. Many casino companies were hit with dual disasters. They were involved in multi-billion dollar expansions and corporate takeovers right when business dried up and the credit markets froze. Some of those loans require periodic payments, minimum cash flows and high equity to debt ratios.

As with the Great Depression, stock markets crashing made things far worse during the Mini-Depression. Every gaming company was hit. The common stock of

MGM Mirage dropped 94% over the last year, and the Las Vegas Sands almost disappeared: its common stock fell 97%.

Many companies did go under. Trump Entertainment forced out the Donald immediately before declaring bankruptcy. Herbst Gaming; Greektown Holdings; Greek Isles, formerly the Debbie Reynolds Hotel; Legends Gaming; Magna Entertainment; Progressive Gaming; Fontainebleau; Tropicana Entertainment; Black Gaming, Mesquite, Nevada's biggest operator; Station Casinos, and later its subsidiary, GV Ranch Station Inc., which managed and owned 50 percent of Green Valley Ranch Resort; and, Centaur (Hoosier Park in Indiana and Fortune Valley in Colorado) have also filed. Riviera Holdings lasted until July 2010, while 155 East Tropicana (Hooters), Empire Resorts, UTGR Inc., Majestic HoldCo., and even MGM are still tottering (pushed by its partner, Dubai World) and Harrah's Entertainment had to swap up to \$2.8 billion in new notes due in 2018 for debt coming due that it did not have the money to pay.

The Imperial Hotel and Casino in Cripple Creek, Colorado survived the Great Depression, but the Mini-Depression, plus competition and a ban on smoking, killed the 100+ year old enterprise.

Economic depressions can cause industries to topple like dominoes. Casinos aren't buying as many new slot machines, so manufacturers don't need as many parts from their various suppliers. This hurt not only the manufacturers and suppliers, but the truck drivers who deliver the goods.

Gaming companies cut back on service, even to high-rollers, and laid off employees. The few with cash or available credit, like Penn Gaming, bought back their stock and picked up multi-million-dollar casinos at bargain prices. The rest were, and are, just trying to survive.

All segments of the industry looked for ways to save money. One of the most interesting, legally, were gaming tribes reexamining their compacts. The most dramatic example was the startling announcement from Sycuan, near San Diego, that it would forego both building a second casino and expanding its 2,000 slot machines to 7,500. Instead, the tribe will be putting in Class II machines (electronic bingo machines). The primary reason, besides business being slow and money for expansion being hard to get, was that the tribe had agreed to give the state of California 25% of its slot machine revenue, but nothing on its Class II devices.

The good news is things appear to have bottomed out, and that even during the mini-depression some credit was still available, at least for deals that were a sure thing. Lakes Entertainment had no trouble getting financing to buy the first 2,000 slot machines, of potentially 7,500, for the

Red Hawk Casino it opened near Sacramento, California in December 2008.

For governments, operators and entrepreneurs, the picture is still mixed.

Every level of government is looking to find ways of balancing their budgets. Gambling is seen as a painless tax. Unfortunately, this means that politicians' first reaction is to raise taxes.

On the other hand, depressions call for desperate measures. New Jersey may be the only jurisdiction in North America to ever roll back a smoking ban – for Atlantic City casinos.

I was hired by government officials in two states that used the mini-were for major expansions of legal gambling.

The Delaware State Lottery retained me to recommend the tax rate for the new sports books it was opening. I told them that the lower the tax rate, the more companies would be willing to invest in buildings and jobs; but it was vital that the tax be significantly below the psychologically devastating barrier of 50%, if private industry is going to invest anything in the expansion.)

The Florida State Senate hired me to analyze and give my recommendations on legal issues surrounding the tribal-state compact the Governor had signed with the Seminole Tribe, to allow the legal introduction of slot machines and other casino games.

The latest developments have been movements toward legalizing intra-state Internet poker. The bill passed the New Jersey State Senate; and it appears it will also come to California. Both states are desperate for tax revenue.

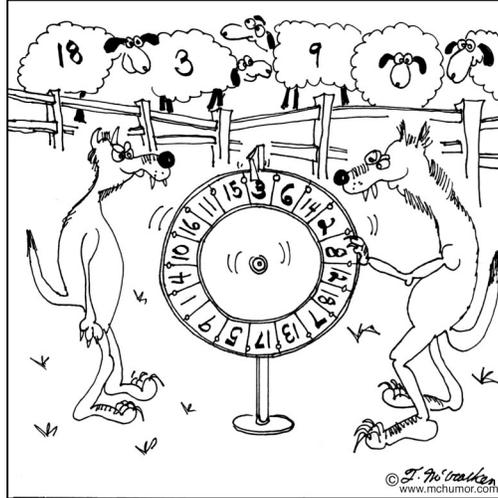
Once the states have allowed residents of their states to play poker online, they will ask Congress to amend the UIGEA to allow cross-state bets among those states that opt-in. Although the Republicans have gained control of the House of Representatives, it is unlikely that even the party of "No" will be willing to prevent state governments from getting the additional tax revenue and jobs they so desperately need.

After all, it was a Mini-Depression, not just a recession.

Ω Ω Ω

© Copyright 2010. Professor I Nelson Rose is recognized as one of the world's leading authorities on gambling law and is a consultant and expert witness for governments and industry. His latest books, INTERNET GAMING LAW (1st & 2nd editions) and GAMING LAW: CASES AND MATERIALS, are available through his website, www.GAMBLINGANDTHELAW.com.

MCHUMOR.COM by T. McCracken



Unnatural Selection.

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

PHACT CALENDAR

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 \$3.75 for all day. Enter the college parking lot on 17th Street which is one way south bound. This meeting site is handicap accessible. **PhACT Meetings are free and open to the public unless otherwise noted.**



Saturday, January 15, 2011 - Prof. Massimo Pigliucci, a professor at the City University of New York. He will speak on the topic of his new book "**Nonsense on Stilts**". Massimo Pigliucci is the chair of the Department of Philosophy at CUNY-Lehman College. He is also the editor in chief for the journal Philosophy & Theory in Biology. He is known as an outspoken critic of creationism and advocate of science education. Pigliucci writes regularly for Skeptical Inquirer on topics such as climate change denial. Has also written for Philosophy Now and maintains an internet blog called "Rationally Speaking." which may be found at:

<http://rationallyspeaking.blogspot.com/>

Note: This month's meeting will be in the Winnet Student Life Building, on 17th St. See Page 1.

Saturday, February 19, 2011 - David Clarke will speak on cults.

Saturday, March 19, 2011 - TBA

Saturday, April 16, 2011 - TBA

Saturday, May 21, 2011 - Annual PhACT Banquet at Sorello Rose in Flourtown, PA.

Tuesday, January 18, 2011 at 7:30PM - **Edmund Morris, "Colonel Roosevelt"** at **Free Library of Philadelphia**, 1901 Vine Street, 19103 - The New York Times Book Review called Edmund Morris's biography The Rise of Theodore Roosevelt, "one of those rare works that is both definitive for the period it covers and fascinating to read for sheer entertainment." Winner of the Pulitzer Prize and National Book Award, the book forms a definitive trilogy—with Theodore Rex and his new biography, Colonel Roosevelt—about an extraordinary American President who, among other things, wrote 40 books, hunted lions, founded a third political party, survived an assassin's bullet, and explored an unknown river longer than the Rhine.

Cost: \$15 General Admission, \$7 Students, Buy tickets online | Ticket and Subscription Packages, <http://libraryphila.tix.com/Event.asp?Event=329953>Tickets on sale January 7, 2011 at 10:00 AM

Friday, January 21, 2011 - **Delaware Valley Amateur Astronomers - 7:00 PM in the Greater Plymouth Community Center, 2910 Jolly Rd, Plymouth Meeting, PA DVAA Member's Night**

- Al Lamperti on "Evolution of the Flat Galaxy & Southern Arp Observing Programs."
- Charles Zarcone on "Solar Sights, Storms, and Sounds."
- Wayne Reed on "Solar Astrophotography."

Free and open to the public. <http://dvaa.org>

Wednesday, January 26, 2011 - at 7:30 P.M. - at Broad Axe Tavern, 901 West Butler Pike, Ambler, PA 19002, American Revolution Round Table of Philadelphia (ARRTOP) Kim Hanley appearing as Abigail Adams. <http://ahtheatre.org/america/home/abigail-adams> - This meeting is free and open to the public. <http://arrtop.com/>

Saturdays, January 29th & February 5th, 2011, 10:00 AM to 11:45 AM both days. - **THOMAS PAINE: THE FORGOTTEN FOUNDING FATHER** in 2 parts. At the Henry George School, 413 S. 10th Street, Philadelphia, PA 19147 Thomas Paine is remembered as author of Common Sense, the pamphlet that helped to stir the colonists desire for independence from British rule in 1776. His contributions to history of human progress and to political discourse are deeper and far more extraordinary. This two-part presentation details his life, the reasons for his near-disappearance in our history books, and examines his major writings. Continuing program over two Saturdays. Edward J. Dodson, M.L.A. Henry George School Birthplace Museum faculty will lead discussion. 215-922-4278 <http://www.henrygeorgeschoolphila.org/> Free.

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

Wednesday, February 2, 2011 at 06:00PM - 08:00PM- "Great Adventures along the Silk Road" Lecture Series - The Plague: Deadly Travel Companion of Trade Routes" at University of Pennsylvania Museum of Archaeology and Anthropology. Lester K. Little, Professor of History, Smith College, focuses on plague in this "Great Adventures" lecture. Virtually all of the major epidemics of infectious diseases in history have followed quite closely upon recently opened avenues of communication. This is clearly the case with the most dreaded of diseases, bubonic plague, in all three of its documented pandemics. The first of these united East and North Africa, the Middle East, and Europe, the second all of Eurasia, and the third seaports throughout the world. What role did the Silk Road play in this grim history? Reception to follow. Admission: \$5 per lecture with advance registration; FREE for Penn Museum members with advance registration; \$10 at the door.

Wednesday, February 2, 2011 at 7:30 PM - Rittenhouse Astronomical Society Monthly Meeting. At the Franklin Institute, Free.
www.rittenhouseastronomicalsociety.org

Tuesday, February 8, 2011 at 7:30PM - Annette Gordon-Reed | "Andrew Johnson: The American Presidents Series: The 17th President, 1865-1869" at Free Library of Philadelphia, 1901 Vine Street, 19103 - When Andrew Johnson succeeded Abraham Lincoln to the presidency of the United States, he faced a nearly impossible task: to reconcile the nation after the Civil War while working with a recalcitrant Congress controlled by the Radical Republicans. In her new biography, Annette Gordon-Reed—a leading historian of slavery in the United States—illustrates Johnson's pivotal moments and missed opportunities. A professor of law at New York Law School, Gordon-Reed won the Pulitzer Prize and National Book Award for *The Hemingses of Monticello*. She is the author of *Thomas Jefferson and Sally Hemings: An American Controversy*, co-author with Vernon Jordan of *Vernon Can Read!*, and the editor of *Race on Trial*. Cost: \$15 General Admission, \$7 Students, Buy tickets online <http://libraryphila.tix.com/Event.asp?Event=329959>, Tickets on sale January 7, 2011 at 10:00 AM

Thursday, February 10, 2011 at 7:30PM - Michael Scheuer | "Osama bin Laden" at Free Library of Philadelphia, 1901 Vine Street, 19103 Michael Scheuer—the former chief of the bin Laden unit at the CIA's Counterterrorist Center—is the bestselling author of *Imperial Hubris: Why the West is Losing the War on Terrorism and Through Our Enemies' Eyes: Osama bin Laden, Radical Islam, and the Future of America*. With Osama bin Laden, Scheuer challenges bin Laden biographers who depict the mastermind of the attacks of September 11, 2001, as a no-longer-relevant historical figure. Instead, he offers a hard-headed, closely reasoned portrait that shows bin Laden as a leader and strategic genius with considerable rhetorical abilities. Patient, devout, and ruthless, Scheuer's bin Laden remains a formidable enemy of the West. FREE. No tickets required. For Info: 215-567-4341.

February 18, 2011 Delaware Valley Amateur Astronomers 7:00 PM in the Greater Plymouth Community Center, 2910 Jolly Rd, Plymouth Meeting, PA - "BLAST -- Balloon-borne Large-aperture Submillimeter Telescope" - Professor Mark Devlin, University of Pennsylvania's Physics & Astronomy Dept., on "BLAST -- Balloon-borne Large-aperture Submillimeter Telescope" and its latest findings - experimental cosmology. Free and open to the public. <http://dvaa.org>

SOCRATES CAFE is moderated by: Lewis Mifsud, Ph.D., P.E., a member of PhACT and of The American Academy of Forensic Sciences. At the Springfield Township Public Library (215-836-5300) at 1600 Papermill Mill Road, Wyndmoor, PA. 19038. This philosophical discussions group is free and open to the public. Join us and share your critical thinking, questions and opinions.



Wednesday, February 23, 2011 - at 7:30 P.M. - at Broad Axe Tavern, 901 West Butler Pike, Ambler, PA 19002, American Revolution Round Table of Philadelphia (ARRTOP) Barnet Schecter on his new book "George Washington's America: A Biography Through His Maps". - This meeting is free and open to the public. <http://arrtop.com/> - This meeting is free and open to the public. <http://arrtop.com/>

Sunday, February 20, 2011 12 Noon - 5 PM --- West Laurel Hill Cemetery, Bala Cynwyd - 13th ANNUAL GEN. MEADE SOCIETY SYMPOSIUM: "PHILADELPHIA ON THE HOME FRONT IN THE CIVIL WAR"

The event will feature noted author and historian, Judith Ann Giesberg, PhD, of Villanova University, author of *Army at Home: Women and the Civil War on the Northern Home Front (Civil War America)*, and *Civil War Sisterhood: The U.S. Sanitary Commission and Women's Politics in Transition*, and society members Carol Neumann, Kerry Bryan, and Michael Wunsch.

The cost of the event is \$30 per person, including registration; luncheon & refreshments, to register, contact Jerry McCormick at 215-848-7753 or gedwinmc@msn.com



Thursday, February 24, 2011 at 06:00PM - 08:00PM - an Archeological Institute of America lecture. "Roman provincial coins: between civic pride and state control". Michel Amandry will lecture, at University of Pennsylvania Museum of Archaeology and Anthropology.

Under the Roman Empire, hundred of cities struck bronze coinage. These coins used to be called "Greek imperials", indicating that they were struck under the Roman Empire but mostly with legends in Greek. In the past, they were deemed to be part of Greek coinage, and they were catalogued and classed in coin cabinets as Greek coins, following on from the archaic, classical and hellenistic series. The new terminology - Roman provincial coinage - stresses the rôle of these coins alongside the Imperial coinage. This unifying term nevertheless covers considerable diversity: coins of individual Greek cities with or without an imperial portrait (these last often called "pseudo-autonomous"), coins struck by leagues (such as the Thesalian or Lycian leagues), koina (like those of Macedon or Cyprus), by Roman colonies or municipia. What unites them all is their function. Instead of seeing them as the final, degenerate phase of Greek coinage, we now recognise their importance as part of the stock of coinage circulating in the Roman Empire. Admission: Pay-what-you-want at the door.

Tuesday, March 1, 2011 at 7:30PM - James Gleick, "The Information: A History, a Theory, a Flood", at Free Library of Philadelphia, 1901 Vine Street, 19103 James Gleick's bestselling book, *Chaos: Making a New Science*, explained chaos theory in layman's terms by focusing on the stories of those scientists who were pioneers in the field and was a finalist for the National Book Award and the Pulitzer Prize. A former science writer for the New York Times, Gleick is the author of two bestselling biographies: *Genius: The Life and Science of Richard Feynman* and *Isaac Newton*, as well as *Faster: The Acceleration of Just About Everything*. His first book in seven years, *The Information* shows how our modern information age developed, following the people, technologies, and theories that helped shape it. FREE. No tickets required. For Info: 215-567-4341.

Wednesday, March 2, 2011 at 6:00 PM to 8:00 PM at University of Pennsylvania Museum of Archaeology and Anthropology. Great Adventures along the Silk Road Lecture Series "Samarkand in the Age of Tamerlane (Timur Lang)". Old Samarkand- Afrasiyab was completely destroyed by the Mongol invasion of 1220. The centuries-old site stood abandoned. The new Timurid Samarkand arose in the surrounding gardens to become a model for early modern cities of western Asia. Reception to follow. Admission: \$5 per lecture with advance registration; FREE for Penn Museum members with advance registration; \$10 at the door.

Thursday, March 3, 2011 at 7:30PM - Dr. Izzeldin Abuelaish - "I Shall Not Hate: A Gaza Doctor's Journey on the Road to Peace and Human Dignity" at Free Library of Philadelphia, 1901 Vine Street, 19103 - Born and raised in the Jabalia refugee camp in Gaza, Izzeldin Abuelaish is a Palestinian doctor who worked in Israeli hospitals as an obstetrician and gynecologist specializing in infertility. In January 2009, three of his daughters and a niece were killed by Israel Defense Forces at his home in Gaza. Dr. Abuelaish's heartbreaking response to the incident was captured live on Israeli television and broadcast across the country and beyond. Despite his tragic loss, Dr. Abuelaish—a Nobel Peace Prize nominee—has become an inspiring advocate for peace for people of many faiths. As a monument to the lives of his daughters, he created Daughters for Life, a foundation dedicated to providing education and health services to women and girls throughout the Middle East. FREE. No tickets required. For Info: 215-567-4341.

Wednesday, March 9, 2011 at 7:30 PM - Rittenhouse Astronomical Society Monthly Meeting. At the Franklin Institute, Free.
www.rittenhouseastronomicalsociety.org

Sunday, March 20, 2011 at 2 – 4 pm, Jazz Luncheon Presented by Regol Concerts: The Lenny Pierro Group
Featuring vocalist Katie Eagleson, Al Harrison trumpet, Lenny Pierro saxophone and arranger, Tom Lawton piano, Madison Rast bass, Grant MacAvoy drums.
All tickets \$12, \$10 for groups of 15 or more and \$5 for children under 12 Includes lunch. At Abington Presbyterian Church, 1082 Old York Road, Abington, PA 19001 (corner of Old York and Susquehanna Roads). Awesome music, fabulous food! Make your reservations early for this late luncheon!
215.528.0582 www.regolconcerts.org

Wednesday, March 23, 2011 - at 7:30 P.M. - at Broad Axe Tavern, 901 West Butler Pike, Ambler, PA 19002, American Revolution Round Table of Philadelphia (ARRTOP) John A. Nagy on his new book "Revolutionary War Spies of Pennsylvania". - This meeting is free and open to the public. <http://arrtop.com/>

Thursday, March 31, 2011 at 7:30PM - Bart D. Ehrman | "Forged: Writing in the Name of God—Why the Bible's Authors Are Not Who We Think They Are" at Free Library of Philadelphia, 1901 Vine Street, 19103. Bart D. Ehrman is the author of more than 20 books, including the New York Times bestsellers *Misquoting Jesus*, *God's Problem*, and *Jesus, Interrupted*. The James A. Gray Distinguished Professor of Religious Studies at the University of North Carolina, Chapel Hill, Ehrman is a leading authority on the historical Jesus, early Christian apocrypha, the apostolic fathers, and the manuscript tradition of the New Testament. In *Forged*, Ehrman offers new, original research that reveals the contentious religious, political, and personal rivalries that shaped the form and content of the New Testament—and considers the evidence and implications of forgeries in the Bible. Cost: \$15 General Admission, \$7 Students
| <http://libraryphila.tix.com/Event.asp?Event=329967>

Sat. & Sun., April 2 & 3, 2011 - 10:00 - 4:00 PM - The 3rd Regiment Infantry United States Colored Troops Civil War Re-enactors will present programs of civil war history focusing on the contributions of Colored troops in the Civil War. This event will be at historic Fort Mifflin located at Fort Mifflin & Hog Island Roads near Philadelphia International Airport. Admission is free with the price of admission to the Fort.
For more information:
3rd Regiment: www.3rdusct.org
Fort Mifflin: www.fortmifflin.us

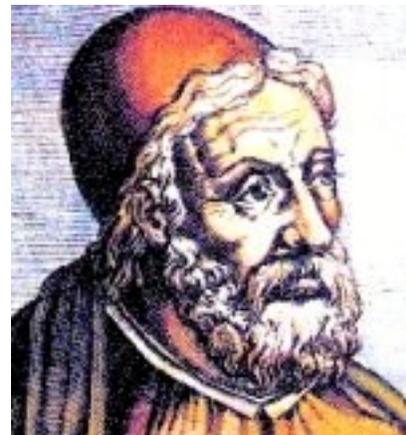
Wednesday, April 13, 2011 at 7:30 PM - Rittenhouse Astronomical Society Monthly Meeting. At the Franklin Institute, Free.
www.rittenhouseastronomicalsociety.org

Thursday, April 21, 2011 at 7:30PM Elijah Anderson | The Cosmopolitan Canopy: Race and Civility in Everyday Life", at the Free Li-

brary of Philadelphia, 1901 Vine Street, 19103 - Acclaimed sociologist Elijah Anderson has been called "one of our best urban ethnographers" by the New York Times Book Review. Formerly the Charles and William L. Day Distinguished Professor of the Social Sciences at the University of Pennsylvania, Anderson is currently the William K. Lanman, Jr. Professor of Sociology at Yale University. He is the author of *Code of the Street* and *Streetwise*, two compelling books about life in America's inner-cities based on research completed in Philadelphia. In *The Cosmopolitan Canopy*, Philadelphia is the setting for Anderson's investigation of the complex interplay of urban social nexuses—like Rittenhouse Square, Reading Terminal Market, and 30th Street Station—that he dubs "cosmopolitan canopies." FREE. No tickets required. For Info: 215-567-4341.

Wednesday, April 27, 2011 - at 7:30 P.M. - at Broad Axe Tavern, 901 West Butler Pike, Ambler, PA 19002, American Revolution Round Table of Philadelphia (ARRTOP) Todd Braisted on Loyalists - This meeting is free and open to the public. <http://arrtop.com/>

Wednesday, May 11, 2011 at 7:30 PM - Rittenhouse Astronomical Society Monthly Meeting. At the Franklin Institute, Free.
www.rittenhouseastronomicalsociety.org



Claudius Ptolemy (c. 90 - 168 AD), astronomer and astrologer, Roman citizen in Egypt

Saturday, May 21, 2011 The End of the World will occur again.
<http://www.wecantknow.com/>

Wednesday, May 25, 2011 - at 7:30 P.M. - at Broad Axe Tavern, 901 West Butler Pike, Ambler, PA 19002, American Revolution Round Table of Philadelphia (ARRTOP) J. Kevin Graffagnino, Director of the William L. Clements Library at the University of Michigan. He will speak on "**The Quotable Ethan Allen.**" Leader of the Green Mountain Boys, hero of Ticonderoga, defender of independent Vermont, and the New England frontier's version of Daniel Boone or Davy Crockett, Ethan Allen was also a prolific and passionate writer. Based on his 2005 book with H. Nicholas Muller III, *The Quotable Ethan Allen*, Kevin Graffagnino's lecture offers a representative selection of Ethan's fiery rhetoric on the Yankee v. Yorker struggle for control of Vermont, the American Revolution, theology, the rights of man, and other subjects that attracted his attention. Anyone who's encountered Ethan Allen in early American history will enjoy this encounter with Ethan in his own words. - This meeting is free and open to the public. <http://arrtop.com/>

Wednesday, June 8, 2011 at 7:30 PM - Rittenhouse Astronomical Society Monthly Meeting. At the Franklin Institute, Free.
www.rittenhouseastronomicalsociety.org



Science on Tap, A Science Café

Science on Tap is a monthly gathering in Philadelphia for anyone who is interested in getting

together with other people to discuss a range of engaging science topics.

Held at National Mechanics, a relaxed, convivial bar in Old City, *Science on Tap* features a brief, informal presentation by a scientist or other expert followed by lively conversation. The goal is to promote enthusiasm for science in a fun, spirited, and accessible way, while also meeting new people. Please come join the conversation! On the **second Monday of each month at 6:00 PM.**

What's On Tap

January 10, 2011 - "Yellow Fever Epidemics in Philadelphia" - Annie Brogan, Librarian, Mütter Museum, Presented by the Mütter Museum of the College of Physicians of Philadelphia

In the Fall of 1793, the city of Philadelphia was terrorized by Yellow Fever. Panic spread, as both city officials and prominent physicians became overwhelmed with the onslaught of death and suffering. But in the face of extreme opposition from his colleagues, and with blind obstinacy, Benjamin Rush persevered with his treatments of bloodletting and mercury, dividing

the city and the medical profession. The story of Benjamin Rush is the story of one man's personal heartbreak and isolation in the midst of crisis and the evolving practice of medicine.

February 14, 2011 - IYC 2011 Presented by Chemical Heritage Foundation

For more information see :

<http://www.chemheritage.org/visit/events/science-on-tap/index.aspx>

National Mechanics

22 South Third St. Philadelphia PA 19106
215-701-4883

Free and Open to the public (age 21+) or minors accompanied by a chaperone 25+. Want to join the Science on Tap mailing list? Contact us at scienceontapphilly@gmail.com and include "subscribe to mailing list" as the subject line

Science for what ales you

The science café movement began in Leeds, England in 1998 when a local pub decided to foment a new kind of bar-room brawl—a scientific debate. The idea took off as a unique way to advance public understanding of science. Now, there are locations from Maine to California where, for the price of a beer or a glass of wine or a cup of coffee, anyone can discuss scientific ideas with leading experts in their fields and learn about developments that are changing our lives.



20010-11 Penn Science Café Schedule

The Penn Science Café, the lecture series that hauls science out of the lab and treats it to a night on the town. Free and open to the public, it's an opportunity to pitch questions to leading scientific experts.

7:00 P.M. @ the MarBar, 40th and Walnut street location, 2nd floor of the Marathon Grill, menu items available for purchase. RSVP to Gina Bryan at bryangm@pobox.upenn.edu or 215-898-8721. RSVPs are required.

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

Tuesday, Jan 25, 2011 - The World Water Crisis Stan Laskowski, President of the Philadelphia Global Water Stanley Laskowski, a teacher, lecturer, and advisor at Penn, is also the director of the Philadelphia Global Water Initiative, a regional organization dedicated to help provide basic water and sanitation services to everyone in the world. In this, the Year of Water at Penn, Laskowski will discuss the World Water Crisis. At Penn, Laskowski develops and teaches environmental management and policy courses and advises students and professors in environmental science, business, law, and medicine. For more than

30 years, Laskowski was involved in essentially all major environmental programs administrated by the United States Environmental Protection Agency's Mid-Atlantic office, co-managing a staff of 900 engineers, scientists and support personnel. His areas of special interest include US and global environmental management, environmental policy, and issues related to the attainment of the UN Millennium Development Goals for water and sanitation. He is a tireless supporter of various non-for-profit organizations.

Wednesday, Feb 16, 2011 - Why You Can Hardly Swing A Dead Cat Without Hitting A Dead Cat In an Animal Shelter Today. The Obvious, the Occult, and the Counterintuitive World of Animal Sheltering Michael Moyer, VMD, Rosenthal Director of Shelter Animal Medicine

Wednesday, March 16, 2011 - Stealing the Past: Collectors and Museums of the 21st Century Richard Leventhal, Curator, Penn Museum

Wednesday, April 20, 2011 - From Barbershops to Basketball Courts: Culturally Relevant Interventions in the African American Community Howard Stevenson, Associate Professor of Applied Psychology, Graduate School of Education

Wednesday, May 18, 2011 - Neuroeconomics: Decision Making and the Brain Joe Kable, Associate Professor of Psychology



1700 West Montgomery Avenue
Philadelphia, PA 19121
ph 215-763-6529 www.wagnerfreeinstitute.org

Wagner courses and events are free. Tax deductible contributions are greatly appreciated.

Adult Education Course Schedule Spring 2011 Courses

Invasive Plants: A Growing Concern in the Mid-Atlantic Region, Professor Karen Snetselaar. 6 weeks, Wednesday, January 19, then Mondays, January 24 through February 21, 2011, 6:30 to 7:45 PM. Pennsylvania Horticultural Society, 100 N. 20th Street (20th and Arch Streets). This course will examine why plants are considered to be invasive and will look at common invasive plants of the Mid-Atlantic region.

This course requires preregistration. Preregistration is now open. To preregister, call 215-763-6529, ext. 23.

Adventures of a Molecular Geneticist: Tears of the Cheetah, Professor Mary Beth Davis. 6 Wednesdays, January 19 through February 23, 2011, 6:30 to 7:45 PM. Independence Branch of the Free Library, 18 S. 7th Street (between Market and Chestnut). This course will follow the work of world renowned geneticist Dr. Stephen J. O'Brien to learn basic concepts in population genetics, evolution, and genomics.

No preregistration required.

Exceptional Fossil Preservation: Fossil Lagerstätten and what they reveal about prehistoric ecology and evolution, Professor William Gallagher. 10 Saturdays, January 29th through April 2nd, 2011, 10:30 AM to Noon. University of Pennsylvania Museum of Archaeology and Anthropology, 33rd and Spruce Streets. This course will survey some of the fossil sites that demonstrate exceptional preservation of prehistoric organisms and consider what these snapshots in time tell us about evolution and paleoecology.

No preregistration required.

Lectures

THURSDAY, FEBRUARY 10, 2011 - 4:00 - 7:00 PM, Lecture at 5:30 PM - Nasal Attraction: How Your Nose Can Help You Select a Suitable Partner

Presented by DR. JOHAN LUNDSTROM, Monell Chemical Senses Center

Does the nose know best? Recent scientific discoveries have shown that a woman's partner choice depends on personal chemistry. More specifically, the data demonstrates that information about genetic similarities is hidden within body odor and that this information can help in the selection of a partner.

Just in time for Valentine's Day, this talk will reveal how this mechanism was discovered, how it works, and how it may impact

our everyday lives.

Dr. Johan Lundström leads the Cognitive Neuroimaging Laboratory at the Monell Chemical Senses Center. His research aims to provide a better understanding of how the human brain allows us to perceive, process and understand chemosensory information.

WEDNESDAY, MARCH 16, 2011 - 4:00 - 7:00 PM, Lecture at 5:30 PM - A New Formula: A Behind the Scenes Look at the Wagner's Building Conservation Plan

Presented by Architectural Conservators DOROTHY KROTZER and MARLENE GOEKE

Learn more about the intriguing field of architectural conservation, a profession that blends science, history, and design in order to understand why buildings deteriorate and what can be done to save them. Using the Wagner Free Institute's exhibit hall ceiling as a case study, this talk will focus on how conservators investigate historic buildings and the diagnostic tools they use in the field and laboratory to develop solutions for restoration projects.

Dorothy Krotzer is the Director of the Philadelphia office of Building Conservation Associates (BCA), a consulting firm that assists in all aspects of building restoration.

Marlene Goeke is a staff conservator at BCA and a recent graduate of the University of Pennsylvania's Graduate Program in Historic Preservation.

The speakers led the recent Getty Foundation-funded study of the Wagner's plaster ceiling.



Marlene Goeke surveys the Wagner Free Institute's exhibit hall ceiling.

SATURDAY, MARCH 26, 2011 at 1:00 PM, Museum is open 12:00 to 4:00 PM - Westbrook Lecture 2011 - "Adventures Among Ants"

Mark W. Moffett, Smithsonian Institution

Ecologist, entomologist, National Geographic photographer and intrepid world-traveler, Mark Moffett will discuss his research on ants from the Amazon to Borneo. Nicknamed "The Indiana Jones of Entomology" by the National Geographic Society, Dr. Moffett has traveled the globe studying the mysterious world of ants, discovering new species and behaviors in the process. His talk will explore the many parallels between ant colonies and human societies.

Dr. Mark Moffett is a Research Associate in Entomology at the Smithsonian Institution. His work focuses on the ecology of forest canopies and the behavior of social insects. He studied under E.O. Wilson at Harvard University, and oversaw the world's largest ant collection at the Museum of Comparative Zoology. He is the author of 80 peer-reviewed publications and 3 books, including *Adventures Among Ants*, winner of the 2010 National Outdoor Book Award, and has appeared on the *Colbert Report* and *Late Night with Conan O'Brien*.



Connecting people to nature since 1812.

The Academy of Natural Sciences Center for Environmental Policy “Philadelphia’s Window on the Environment”

Center for Environmental Policy
The Academy of Natural Sciences
1900 Benjamin Franklin Parkway, Philadelphia, PA 19103
www.ansp.org/environmental/
215-299-1108 cep@ansp.org

Upcoming Public Events

Thursday, January 13, 2011, 6:30–8:30 pm - Archives and Expeditions

In this new series, Academy staff tell the stories behind the Academy’s early explorers and their expeditions all over the world. See the dioramas and study specimens that are a part of their legacies and the explorers’ very



own field journals, correspondences, hand-drawn maps, vintage photographs, and a wealth of related records from the Academy Archives.

This first session will highlight Brooke Dolan II, who at the age of 23 set out on a major collecting expedition to Western China to collect birds, mammals, and mollusks that would form an essential core of the Academy's Asian study specimens. Thanks to Dolan’s efforts the takin, the wild yak, and the ever-popular giant pandas were put on educational exhibit.

\$15/members; \$20/non-members

Call 215-299-1060 to register.

Thursday, January 20, 2011, 6–8:30 pm

6:00 pm: Reception and information tables
6:30 pm: Program

In a large city like Philadelphia, pests, air pollution, and other sources of detrimental environmental exposures impact the quality of our daily lives. The methods we choose to control pests, the cleaning and personal care products we purchase and use, and how we care for our immediate home environment can have consequences on our health. As we navigate our weekly routines, we can all find ways to reduce harmful exposures, and enhance the health of our home environments. Come hear experts discuss less toxic pest

control, safe cosmetic and cleaning products, and learn how our collective efforts to enhance home health can benefit ourselves and the greater Philadelphia community. Information tables will offer additional information from local businesses who promote healthy homes through the services they offer!

Featuring:

Julie Becker, PhD, MPH (Moderator): President and Founder of Women’s Health & Environmental Network
Michelle Niedermeier: Community Integrated Pest Management (IPM) Coordinator, Penn State Philadelphia County Cooperative Extension Office.

RSVP at:

urbansustainabilityforumhealthyhome.eventbrite.com/

Saturday, February 26, 2011, 11 am – 1 pm (rain/snow date is March 5, 2011)

Urban Forestry Hike

The term “urban forestry” may sound a bit odd, but trees in the city play just as big a part in our ecology as the trees in the deep dark forest. In honor of the United Nation's declaration of 2011 being the International Year of the Forests, we will take a close look at trees growing in the concrete canyons of Philadelphia and right outside the Academy’s doors.

Dr. David Hewitt, a research associate in the Academy’s Botany Department, will

talk about where these trees came from, how to identify them in winter, and discuss their important roles in our ecosystem.

\$15/members; \$20/non-members

Maximum of 12 participants

Call 215-299-1060 to register.



Saturday, March 19, 10 am – 4 pm (rain/snow date is March 26) - Fossil Collecting Field Study

Join Ned Gilmore, collection manager of the Vertebrate Paleontology Department, as he takes you back in time 70 million years to the Late Cretaceous. Discover animals and plants that once lived in the primeval swamps and seas of our region by examining ancient sediments exposed from the diggings of the Chesapeake and Delaware Canal. Keep what you find!

(Scientifically significant specimens may be retained for the Academy's paleontology collections.)

\$35/members; \$40/non-members, Maximum of 20 participants, Call 215-299-1060 to register.

Laurel Hill Cemetery

3822 Ridge Avenue - Philadelphia, PA 19132.
215-228-8200 <http://www.thelaurehillcemetery.org>



Hours of Operation:

Monday-Friday 8:00am-4:30pm

Saturday-Sunday 9:30am-4:30pm

Closed Major Holidays

Admission to Laurel Hill Cemetery is always free

Sunday, January 16, 2011 at 2pm - An Old Cemetery in a New Year: An Overview of 175 Years of History, 1836-2011

Start the New Year off with a nod to years past. Join Laurel Hill Cemetery in this first program of the 2011 season! An informative overview of Laurel Hill's long and colorful history, this tour will include all of the highlights, hot spots and notable stories that afford the cemetery its WOW factor. This is the ultimate tour for first-time visitors to Laurel Hill, and anyone else who likes beautiful art, stimulating history, and just enjoying life...even amongst the dead. \$15.00

Saturday, January 22, 2011 at 4pm - A Dream within a Dream: Rousing Edgar Allan Poe by the Light of a Full Wold Moon

TWILIGHT TOUR Some have speculated that Poe's tales may have been inspired amidst the graves and gardens of Laurel Hill Cemetery. Newly opened when Poe took up residence within the city, the famed necropolis could draw more than 40,000 visitors in one season alone...surely, Poe could well have been among those curious souls. This twilight tour of Laurel Hill will focus on what history has revealed to us of Poe's time spent in Philadelphia – on the literature he produced, and of the friends, associates, (and enemies) who traveled within his circles, many of whom now reside permanently at Laurel Hill, including Henry Beck Hirst, Joseph Clay Neal, and George Rex Graham. The program will conclude with a vinous toast to Poe in the wintry month of his 202nd birthday. \$20.00

Saturday, January 29, 2011 at 10am - Tangling Amid Tombstones: A Zentangle Art Workshop

Create art in an artfully beautiful place! Daytime has you running from one task to another; nighttime sees you planning for tomorrow! The week goes by in a flash and the weekend, even faster. Need a little break? Try Zentangle. Zentangle is an engaging new art form that easy to learn and fascinating to do. We'll draw inspiration from the patterns and designs of some of the loveliest sculpture in all of Philadelphia. The best part? Its impossible to make mistakes.

To register, click here or go to www.teezee.blogspot.com for more information. You can also email the instructor, Terri Greenberg, CZT at teezeetee@comcast.net \$45.00

Saturday, February 12, 2011 at Noon to 2pm - 'Til Death do Us Part: The Love Stories of Laurel Hill



Join us in honoring the "spirit" of Valentines' Day. Love and Death...The preferred subjects of poets and philosophers across eras and oceans...Subjects intertwined in their great mystery, in their power to inspire, to destroy, and to change our worlds forever.

Some may contend that Death can not bring an end to true Love, while others deem only Love itself to be colder, more unforgiving than Death. The love stories of Laurel Hill are as varied as the hearts from which they have sprung...Hearts no longer intact, though perhaps still beating...for someone...somewhere.

While many of the stories we'll hear may certainly warm our hearts, the rest of our appendages will be subject to the stone-cold of a cemetery winter. Please dress appropriately. Red wine and sultry bites will warm your flesh afterwards. \$25.00

Saturday, February 19, 2011 at 4pm - The Victorian Celebration of Death

During the Victorian period, the burial customs and places used by western society changed greatly and for a variety of reasons. Join us for a discussion inside Laurel Hill's historic Gatehouse concerning the rituals surrounding the death of a loved one, including clothing, burial processions, monuments and symbolism. Following this, a tour of the cemetery will highlight monuments and gravestones illustrating the mourning symbolism discussed earlier. The program will focus on individuals who lived (and died) in this period, such as famed painter Thomas Sully and publisher of Godey's Lady's Book, Louis Antoine Godey. \$20.00



The College of Physicians of Philadelphia
BIRTHPLACE OF AMERICAN MEDICINESM

College of Physicians of Philadelphia
19 South Twenty-Second Street
Philadelphia, PA 19103
(215) 563-3737 x304

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

College of Physician lectures and programs are **free**. There may be a fee at some receptions.

WEDNESDAY, JANUARY 19, 2011 at 12noon

The Barnes in the 21st Century

In 2012, the Barnes Foundation will move its world-renowned teaching collection from Merion to the Benjamin Franklin Parkway in Philadelphia. Derek Gillman, Executive Director and President of the Barnes Foundation, will talk about the early 20th century context in which Albert Barnes formulated his educational method, and how the Foundation will build upon his approach to become an important educational force within Philadelphia in this new century.

Speaker: Derek Gillman, PhD, Executive Director and President of the Barnes Foundation

Derek Gillman was appointed Executive Director and President of the Barnes Foundation in 2006. He has served as President and Director of the Pennsylvania Academy of the Fine Arts, Deputy Director of the National Gallery of Victoria, Australia, and Keeper of the Sainsbury Centre for Visual Arts at the University of East Anglia (UEA). He began his museum career in 1981 at the British Museum as a research assistant in the Department of Oriental Antiquities. Prior to that, Dr. Gillman worked for four years at Christie's in London as a specialist in Chinese art, following a year spent at the Beijing Languages Institute on a British Council scholarship. He earned an undergraduate degree at Magdalen College, Oxford University. Dr. Gillman also holds a Master of Laws degree from UEA.

Cost: \$10.00 includes lunch.

Register at: <http://www.eventbrite.com/event/1111397219>

WEDNESDAY, FEBRUARY 16, 2011 at 12 noon

40 Years and Counting: The War on Cancer

In 1970, President Richard Nixon declared war on cancer. During the past forty years, much progress has been made toward achieving the goal of controlling this disease, and the mortality rates for almost all cancers have declined. Significant advances have been made, especially in the cure of pediatric cancers, by virtue of a coordinated national effort. Medical oncologists have successfully adopted the approaches of pediatric oncologists, which has also led to cures. In addition, greater knowledge of specific etiological factors has reduced mortality through prevention efforts made worldwide. However, the most dramatic advances during the past four decades have been in the areas of basic science and genetics. We will discuss the roles of heredity, environment and spontaneous mutation in the origin of cancer, what we may learn from hereditary cancer, how some cancers can be cured and others prevented, and why the disease will never disappear.

Speakers: Alfred Knudson, MD and Anna Meadows, MD

Alfred Knudson, MD, discovered the world of genetics in Morgan's Biology Department at the California Institute of Technology (Caltech) as an undergraduate. He then traveled east to study medicine, discovering pediatrics at Columbia's College of Physicians and Surgeons. He earned a PhD in Genetics at Caltech, and then went to the University of Texas and MD Anderson Cancer Center where he served as Dean of the Graduate School. In 1976 he became the Director of the Institute for Cancer Research at the Fox Chase Cancer Center. He continues his research at Fox Chase, where he also serves as special assistant to the president.

Anna T. Meadows, MD, earned a BA from Queens College, an MA in Psychology from New York University, and an MD Degree from Women's Medical College. In 1972, she came to The Children's Hospital of Philadelphia (CHOP) as a Fellow, eventually becoming a Professor of Pediatrics in the School of Medicine. She developed the first survivorship program at

CHOP and, later, the Living Well after Cancer Program at the University of Pennsylvania. She has served as the Chief of Oncology at CHOP, and as the first Director of the Office of Cancer Survivorship at the National Cancer Institute. Dr. Meadows' clinical and research work has focused on the epidemiology of childhood cancer, and developing treatment programs for children with leukemia, lymphoma and retinoblastoma. Her major professional efforts have addressed the study of cancer survivors.

Cost: \$10.00 includes lunch.

Register at: <http://www.eventbrite.com/event/1111423297>

WEDNESDAY, MARCH 16, 2011 at 12noon

The Science Center: Rocking Philadelphia's Cradle of Eds, Meds, and Innovation

Established in 1963, the University City Science Center was the first, and continues to be one of the largest, urban research parks in the United States. What began as a collaboration among several local academic institutions has grown to include thirty-two colleges, universities and research institutions. Throughout its history, the Science Center has provided physical space and other resources to help commercialize new technologies and nurture new companies. Learn more about the past, present, and future of America's oldest, largest urban science research park.

Speaker: Stephen Tang, PhD, MBA

Dr. Tang became President and CEO of The University City Science Center in February 2008. A seasoned life science, energy technology, and management consulting executive, Dr. Tang previously served as group vice president and general manager with Olympus America Inc., as president and CEO of Millennium Cell Inc., as vice president of A.T. Kearney Inc., and as vice president and co-managing director of the global chemical and environmental practice for Gemini Consulting Inc. He has also served as the Assistant Director and Senior Research Engineer at the Lehigh University Center for Molecular Bioscience and Biotechnology. Dr. Tang earned a doctorate in Chemical Engineering from Lehigh University, an M.B.A. from the Wharton School of Business at the University of Pennsylvania, and a B.S. in Chemistry from the College of William and Mary.

Cost: \$10.00 includes lunch.

<http://www.eventbrite.com/event/1111439345>

WEDNESDAY, APRIL 20, 2011 at 12noon

Islam and the West

Islam is a global factor with which the West must contend. What are the bases of the faith? What exactly does it say about jihad, women, and tolerance? How does it differ from Christianity and Judaism? Why is it such a contentious issue in Europe? Why is the impact of Islam in Europe different from that in the United States? What is the portent for the West? How should the West respond to Islam? These and other issues will be addressed in this topical and engrossing talk.

Speaker: Buntzie Ellis Churchill

Buntzie Ellis Churchill served for twenty-three years as President of the World Affairs Council of Philadelphia. In this capacity, she hosted dozens of world leaders, from Mikhail Gorbachev and Margaret Thatcher to Henry Kissinger and Colin Powell. A member of the Council on Foreign Relations, Mrs. Churchill has also served as a trustee of many non-profit organizations, including the Pennsylvania Institute of Technology and Drexel University. For a decade she hosted a daily radio show, WorldViews, interviewing experts on international issues. In 2009 she co-authored (with the doyen of Middle East studies, Bernard Lewis) the book *Islam: The Religion and the People*. She has been awarded several honorary doctorates.

Cost: \$10.00 includes lunch.

<http://www.eventbrite.com/event/1111471441>

The Mütter Museum was founded to educate future doctors about anatomy and human medical anomalies. Today, it serves as a valuable resource for educating and enlightening the public about our medical past and telling important stories about what it means to be human. The Mütter Museum embodies The College of Physicians of Philadelphia's mission to advance the cause of health, and uphold the ideals and heritage of medicine.



Chemical Heritage Foundation

**Events and exhibits at
Chemical Heritage Foundation**
315 Chestnut Street - Philadelphia, PA 19106
Tel: 215-925-2222 • Fax: 215-925-1954
<http://www.chemheritage.org>

Events and exhibitions are free and open to the public unless otherwise noted.

Tuesday, January 11, 2011 - noon to 1:00 PM

Brown Bag Lecture: "The Story of Chemistry from the 18th Century to Today: Great Names, Great Steps"

A talk by Thomas R. Tritton

This will be a sneak preview of the talk to be given at the global kickoff of the International Year of Chemistry in Paris at the end of January.

The history of chemistry is contained in the stories of scientists and their discoveries. Looking back at the past three centuries, Tritton will highlight the ten key discoveries—and the individuals who made them—that led to the formation of modern-day chemistry.

The challenge, of course, is to decide who makes the top ten. Tritton expect to hear considerable debate about the wisdom (or lack thereof) of his choices. Such is the delight for the life of the mind!

Thomas R. Tritton is the second president of CHF, succeeding Arnold Thackray, who founded the organization in Philadelphia in 1982. Tritton served as the twelfth president of Haverford College from 1997 to 2007. He is a cancer chemotherapy research expert with over 150 publications and whose work was continuously funded by the American Cancer Society and the National Institutes of Health.

Before his work at Haverford, he was a professor of pharmacology for twelve years each at Yale University and the University of Vermont. At UVM he also served as deputy director of the Vermont Comprehensive Cancer Center—a Designated Center of the National Cancer Institute—and as vice provost of the university.

In 2007, before assuming the CHF presidency, Tritton was at Harvard University, where he held the title president in residence at the Graduate School of Education. He worked with graduate students in higher education, wrote and taught about leadership and the college presidency, and also designed a new course on social justice. Tritton earned a bachelor of arts degree from Ohio Wesleyan University and a Ph.D. from Boston University.

Tuesday, January 25, 2011 - noon to 1:00 PM.

Brown Bag Lecture: "At the Nexus of Organic Chemistry, Ecology, and Microbiology: Sergei Winogradsky's Research into Chemosynthesis, 1880–1900"

A talk by Lloyd Ackert

In the late 19th century the Russian plant physiologist Sergei Winogradsky (1856–1953) developed a novel perspective on the "role of microbes in the general cycle of life." He applied new instruments, techniques, and theories of organic chemistry to investigating the physiology of "nature's smallest beings,"

microorganisms. His research culminated in his discovery of what he called "a new kind of life"—an inorganic respiration that became known as chemosynthesis. This story brings together not only his research program but also his experiences as a Russian-trained botanist in European laboratories in Strassburg and Zurich, and in expeditions in the Swiss Alps.

Lloyd Ackert wrote a scientific biography of Sergei Winogradsky for his doctoral dissertation under the mentorship of Daniel Todes at Johns Hopkins University. Ackert expanded this work during a postdoc at Yale University for his current book project, *The Cycle of Life*. He is currently at Drexel University where he directs the master's program in Science, Technology, and Society, and teaches courses in history of science, Russian history, and world history.

Friday, February 4, 2011 - 5:00 to 8:00 PM

First Friday: Elemental Matters Opening Celebration

Join us for the opening celebration of Elemental Matters: Artists Imagine Chemistry and meet the artists whose works are featured in the exhibit.

Elemental Matters features contemporary artists whose artwork uses the elements as symbol, material, or energy to transform ordinary associations about chemistry into something genuinely surprising and evocative.

All seven artists will be on hand for the opening and available for informal conversations about their work.

CHF's permanent exhibit, *Making Modernity*, will also be open for viewing.

CHF joins over 40 Old City museums, galleries, and shops in opening its doors from 5:00 to 8:00 p.m. for First Friday. Learn more about First Fridays in Philadelphia's Old City Arts District.



Ongoing exhibitions

Gallery hours are 10:00 a.m. to 4:00 p.m., Monday-Friday.
(Free and open to the public)

The permanent exhibit, *Making Modernity*, and the changing exhibits in the Hach Gallery, DuPont Gallery, and Fisher Gallery can be viewed at any time during museum hours.

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

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

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

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

**Mail checks to:
PhACT
639 W. Ellet Street
Philadelphia, PA 19119**

Name: _____

Address: _____

Phone: _____ E_mail _____

The Philadelphia Association for Critical Thinking is grateful for the hospitality extended by Community College of Philadelphia and especially Dr. David Cattell, Chair of the Physics Department, for hosting PhACT and giving us access to such excellent facilities. Part of CCP's mission is to serve Philadelphia as a premiere learning institution and PhACT is pleased to support this goal by having talks on wide ranging, engaging, and educational topics.

Phactum is, in theory, distributed 6 times a year and is the main propaganda organ for the Philadelphia Association for Critical Thinking.

If you are not a supporting member/subscriber we invite you to become one. \$15 for a one year membership to PhACT with email Phactum subscription. \$25 for US Mail subscription. \$10 for students, email only. Donations are welcome.

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

PhACT's High School Science Fair Student Prize Funds

Total contributed for 2010 prizes	= \$318.00
2010 Goal	= \$300.00
Leftover funds from 2010 fund	= \$ 18.00
contributions to 2011 prizes	= \$375.00
Total 2011 Prize Fund	= \$393.00
2011 Goal	= \$300.00

Please donate. Small contributions are preferred and donations in excess of the 2011 goal will be applied to the 2012 Prize Fund or some other youth science education project not yet determined.

ALL money collected for this project will be used for student prizes. PhACT members and others are invited to participate as judges. Contact Eric Krieg for more information: erickrieg@verizon.net

Policy For Article Use

Except where otherwise noted all materials originating in Phactum may be reprinted by groups recognized in CSI's international network of skeptics organizations as published in Skeptical Inquirer. The author and Philadelphia Association for Critical Thinking must be credited. All other publications must obtain permission from PhACT before using any item.

Permission to use articles and illustrations originating from other sources must be granted by the original publisher.

Contact the editor, Ray Haupt: phactpublicity@aol.com

The PhACT Council 2010/11

Eric Krieg, President	Bob Glickman, Secretary
Wes Powers, Webmaster	Ray Haupt, Treasurer
Mike Caro	Dr. David Cattell Ph.D.
Dr. David Cragin, PhD.	Dr. David Langdon, M.D.,
Tom Napier	Becky Strickland

The PhACT website is: www.phact.org