

When the people find
they can vote
themselves money,
that will herald the
end of the republic.
Benjamin Franklin
(1706 - 1790)

Phactum

The Newsletter of the
Philadelphia Association for Critical Thinking
March 2010

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Saturday, March 20, 2010 at 2:00 PM
in Lecture Room C2-28 in the Center for Business and Industry
at the corner of 18th and Callowhill Streets

Dr. David Cattell, Chairman of the Physics Department of Community College of Philadelphia, will host Dr. Lionel Tiger, Professor of Anthropology at Rutgers University, for a discussion of his book

THE DECLINE OF MALES



Mrs. Obi Wan Kenobi - The "Real" Jedi Master

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gruhn@webdonuts.com
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Dr. Lionel Tiger is the Charles Darwin Professor of Anthropology at Rutgers University. His title reflects his pioneering role in introducing biosocial data into the social sciences. Since the mid-1960's he has been deeply involved in bridging the gap between the natural and social sciences. He has asserted that the words used appear to imply that human social behavior is somehow not natural. But of course it is. Exploring how and why is Tiger's central adventure. As a teacher, writer of books and articles which have been widely published and translated and as co-Research Director of the Harry Frank Guggenheim Foundation, he has been an influential figure in broadening our knowledge about why we do what we do.

He combines his scientific expertise with a lively sense of humor to offer original, entertaining and informative lectures that challenge what is entrenched or fashionable, and move

(Continued on page 2)

I believe there are more instances of the abridgement of freedom of the people by gradual and silent encroachments by those in power than by violent and sudden usurpations. -
James Madison (1751 - 1836), forth President of the United States (1809 - 1817)

(Continued from page 1)

intellectually where others fear to tread. Currently he is focused on day care, young males, the pill, college demographics, the workforce, and the ways in which humans are becoming progressively more and more alienated from their biological roots.

A graduate of McGill University, the London School of Economics at the University of London, England, he is a consultant to the U.S. Department of Defense on the future of biotechnology and the author of a controversial book, *The Decline of Males*. Dr. Tiger, who developed the concept of "male bonding" in his classis study *Men In Groups*, has determined that women are in a trend to surpass men in economic, social and reproductive status - and that the cause of this seismic shift is not political or moral, but biological.

Responding to concerns about the relationship between organizations and their members in the next two decades, Dr. Tiger lectures on "Pleasure: The Carrot, The Stick and The Future of Employment." Pleasure is also the subject of his book: *The Pursuit of Pleasure*. In it, he argues that all our present pleasures can be traced to their functional, basically biological origins. We perceive and pursue pleasure because evolution actually programmed enjoyment into behaviors that are essential for survival.

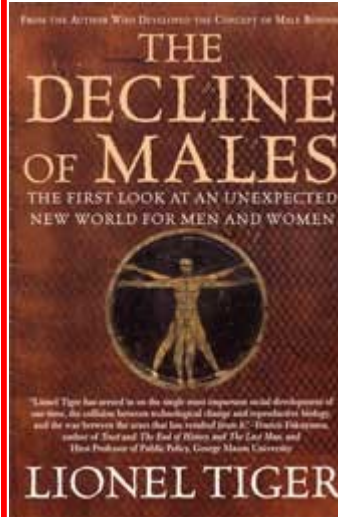
Dr. Tiger is also the author of the much-discussed books *The Imperial Animal* written with Robin Fox; *Optimism: The Biology Of Hope*, *Female Hierarchies*; *Women in the Kibbutz*; and *The Manufacture of Evil: Ethics, Evolution & the Industrial System*. He lives in New York City.

Note: This meeting is free and open to the General Public. Parking is easily available and is free for PhACT attendees at CCP events. Enter the college parking lot on 17th Street which is one way south bound between Spring Garden and Callowhill Streets. This meeting site is handicap accessible.

The Decline of Males: The First Look at an Unexpected New World for Men and Women By Lionel Tiger

Golden Guides from St. Martin's Press, September 2000
ISBN: 978-0-312-26311-9, ISBN10: 0-312-26311-2,
5 1/2 x 8 1/4 inches, 336 pages, Paperback \$17.99

Why have sexual and family norms of American society changed so dramatically in the last few decades? Lionel Tiger presents a unique perspective, offering arresting evidence that the real issue is reproduction, a biological process. He argues that the spread of effective contraception, controlled by women, gives them the sole power to decide to, or not to, bear children. Removed from the process of reproduction, men have begun to feel obsolete, resulting in their unprecedented withdrawal from family systems.



"Lionel Tiger, a pioneer of biological anthropology and developer of the concept of male bonding, here delivers a very well-researched and well-written brief for masculinism, which if successful, may gain parity with feminism and eventually transform women's studies within academia into what they should have always been, namely, gender studies." -- Edward O. Wilson, author of "Consilience" and Pellegrino University Research Professor, Museum of Comparative Zoology, Harvard University.



Men are irrelevant. Women are happy or unhappy, fulfilled or unfulfilled, and it has nothing to do with men. ~Fay Weldon, British novelist, b. 1931

We've begun to raise daughters more like sons... but few have the courage to raise our sons more like our daughters. ~Gloria Steinem, American writer and feminist activist, b. 1934

Letters to the Editor

Editor: The Zwaanendael Museum (Phactum, February 2010) trip materials were great! I can't say I've ever heard of that settlement before; it might be a cool thing to run a list of the first Euro settlements in each of the states along the East and Gulf coasts, states, and a brief commentary (some of the encyclopedic stuff you're so good at digging out!) That merman is a gas The astonishing part is that anyone could take it seriously (such improbable features, at such awkward angles, with -such ridiculous proportions). Then again, a few of those very deep sea fish ARE kinda strange...

Tom Napler's piece in the same edition "Why The Camera Sometimes Lies," was marvelous. I have never really bothered to study photography, particularly the technical aspects; I had a point-and-click camera, which did a decent job, yet I was usually put off by developing costs, so I just never really felt myself drawn to that hobby/field. The optics are really quite fascinating, though, and Napier's brief introduction was clear AND concise. Every so often, you run something that could easily have been in one of the big, "pro" magazines like SI or Skeptic; this was one of those articles! Great job!

Paul Schlueter III
Dallas, PA

Editor: What's up with Cold Fusion (the fascinating prospect that just won't go away)?

While Phactum's editor waits patiently for the article on windmills that I promised him a while back, and I give it what attention I can, I thought Phactum's readership might be interested in this blurb about Cold Fusion. Also, I'm rather curious about where PhACT's membership in general stands on the topic, so your responses will be appreciated. And while I personally remain ambivalent on the practical value of the topic, it is difficult to ignore what I'm currently reading.

The latest issue of SSE's Journal, JSE (Journal of Scientific Exploration), Vol. 23, No. 4, Winter 2009, devotes essentially all of its space (except for book reviews), totaling 104 pages, to Cold Fusion and primarily to previously unpublished "substantive" (long) abstracts by numerous scientific researchers. Much of the physics presented is beyond me, but it's essence is clear. While much of what is presented is theoretically speculative, based on the observations of the individual researchers it appears abundantly clear (at the very least) that the 20-year-old "calorimetry-debate phase" is "history".

Quoting a brief paragraph from that JSE issue by science journalist, Steven B. Krivit, of the New Energy Times:

"That argument ---- about the underlying mechanism or mechanisms responsible for the observed phenomena ---- remains open. However, the arguments about the validity of excess heat-measurements, nuclear products, emissions and effects are, in this author's opinion, beyond question."

For instance, output energy observed by numerous researchers is in the range of 200% to 400% of input energy, and (if memory serves ---- I read this somewhere in the issue, but didn't mark it) one researcher reported an 8000% spike.

My ambivalence (noted above) was put succinctly by two contributing authors, Marissa E. and Scott R. Little, of EarthTech International, Inc., in an introductory essay in the issue:

"All doubts could be put to rest by the development of a commercial energy source based on cold fusion. But before this development can begin, a robust demonstration experiment is required to convince scientists, engineers and investors. A cold fusion cell that produced enough power to run itself would certainly suffice. Several researchers have claimed such large quantities of excess heat; a self-sustaining device should be possible even with the inefficiency of converting heat to electricity. But no such device exists."

Nevertheless, elsewhere in the issue mention is made of ongoing experiments involving driving Stirling engines with the thermal output of the experimental cells; not a closed loop, but certainly a possible precursor to one.

Dave Leiter
Willow Grove, PA

Editor: Years ago, I personally spent an approximate total of \$125 for a gift subscription to JSE (Journal of Scientific Exploration) for PhACT, for two years in succession. My hope was that PhACT would be sufficiently moved to continue the subscription for itself, if for no other reason than to see what the "opposition" might be saying. That hope was apparently not fulfilled, and my only compensation was a piece in Phactum years later, critical of an article on plate-tectonics in one of those gift issues of JSE. Proper professional protocol would have suggested a submission to JSE of a formal critique of the article, with later publication in Phactum, with permission.

Further, I am not disposed to lend my personal copy, or to make individual copies of any of the contents, of this latest JSE issue for PhACT members (in general). However, I can direct interested individuals to SSE's website scientificexplor-



March 23, 2010 is the 21st anniversary of B. Stanley Pons' & Martin Fleischman's somewhat overly optimistic announcement of sustained Cold Fusion reaction.

(Continued from page 3)

ration.org (See "JOURNAL", then "QUESTIONS & HELP") from which they should be able to order their own copies of this issue of JSE. The alternative is to wait a year, at which time essentially all the Cold Fusion portions of the issue will be available free on that website.

Dave Leiter
Willow Grove, PA

Editor: Pennsylvania's Dept. of Corrections (DOC) has recently signed contracts with Michigan and Virginia to house Pennsylvania inmates in their surplus prison cells at the

lated some technical condition of their parole. One third of inmates are non-violent offenders! With 51,000 inmates, releasing just SOME of the parole violators and non-violent offenders will bring the DOC population well below its rated capacity again. 1/3 of 51,000 is 17,000. The PA DOC plans to ship 2,000 inmates to other states, but even so the prisons will remain overcrowded (and even after building the planned new prisons, the system is expected to remain well above capacity.)

Release 5,000, and subsidize their employment in non- or low-skilled occupation; those 5,000 will pay rent to taxpayers, will buy groceries from PA taxpayers, and buy goods and services from PA taxpayers, as well as paying taxes themselves. Instead of paying other states over \$45 Million/year to house our inmates, keep the money in-state and let the inmates get back to useful, economy-building work right here. PA's need to wring every last day of penalty out of as many convicts as possible is just too expensive to indulge any longer.

Paul Schlueter, III
Dallas, PA

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Various Ruminations

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

Former Mexican clinic operators get prison time.

Dr. Stephen Barrett reports in Consumer Health Digest, February 18, 2010:

William R. Fry and Geronimo Rubio, M.D. have been sentenced to federal prison for health care fraud and federal income tax felonies for which both pled guilty in 2007. Fry will serve 14 months, Rubio 12 months, both to be followed by three years of supervised release. For their health care fraud convictions, Fry and Rubio must pay \$63,237 in restitution to insurance providers. Fry was also ordered to pay the Internal Revenue Service (IRS) \$314,159 in back taxes plus interest and penalties for tax years 1997 through 2003.

(Continued on page 5)



Cartoon by Gruhn
gruhn@webdonuts.com
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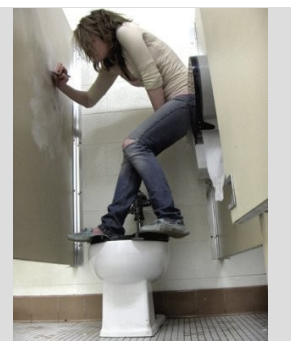
rate of \$62/day. That's \$4,34/week, or the same as paying a wage of \$10.85/hour for a full time job. The DOC could release thousands of non-violent inmates with no chronic medical issues (the same criteria as those states demand) to parole right here in Pennsylvania, give them jobs sweeping the gutters or washing sidewalks, and pay their full salaries, plus benefits, for much less than \$434/week!

One of the largest factors contributing to the current overcrowding of PA DOC prisons is parole violators, most of whom have not committed any further crime, but just vio-

Your Opinions and Ideas Count

Phactum readers are encouraged to write Letters to the Editor and articles of fact and opinion on whatever may be on your mind. Suggestions for improvement of Phactum are very welcome, and do not be shy about denouncing the Editor. Preferably communications will be by email as restroom partitions do not easily fit in the letter box. We do try to avoid Partisan Politics and harsh religion bashing, but we are not averse to controversial topics and bring on the Conspiracy Theories!

Send your submissions to Phactum to phactpublicity@aol.com



Dr. Rubio was ordered to pay the IRS \$356,311 in back taxes plus interest and penalties for tax years 1998 through 2003. Court records indicate that the pair jointly owned and controlled the American Metabolic Institute (AMI) in Bonita, California and operated a clinic called Hospital San Martin, in Tijuana, Mexico. [Two sentenced in federal income tax felonies. USDOJ news release, Feb 9, 2010] <http://www.justice.gov/usao/cas/press/cas10-0209-Fry.pdf> AMI offered lymphatic massage, laetrile, colonics, "bioelectrical medicine," and a long list of other dubious treatments that its Web site characterized as "the most advanced alternative health care system for cancer and other degenerative diseases." In their guilty pleas, the Fry and Rubio admitted that they submitted false bills to American insurance companies and substantially under-reported their income on their individual federal income tax returns.

Politics - Extraterrestrial affairs

Denver voters have accumulated sufficient signatures to cause a ballot initiative to create an Extraterrestrial Affairs Commission to go to voters of that city. It is about time. Equal Rights for Jovians!

<http://www.examiner.com/examiner/x-2024-Denver-UFO-Examiner~y2009m11d30-Extraterrestrial-UFO-ballot-initiative-heads-for-Denver-election>

See page 13 for more on extraterrestrial worlds and life.

Politics - A "town hall" meeting

Pennsylvania's senior senator, Arlen Specter, on Wednesday evening, March 3, 2010 presided over a "Telephone Town Hall" meeting. I am not sure how my telephone number was selected, but it was, and I was one of about 1,500 people from southeastern Pennsylvania who participated in this "town hall". It was an interesting and convenient experience but not nearly as satisfying as attendance at a real event.

Unsurprisingly, the hot topic was the controversial Health Care Bill that has been swirling around Washington, DC growing ever more muddled, expansive, and expensive. During the course of this discussion Senator Specter, in response to a question about the cost of Medicare, briefly discussed the fact that each year approximately \$45 Billion dollars of Medicare funding is consumed by fraud. I find that to be a startling assertion.

Hopefully waste is included in that \$45 Billion fraud estimate, but it was not worded that way.

As best I can determine from an online White House document (<http://www.whitehouse.gov/omb/budget/fy2011/assets/health.pdf>) the Fiscal Year 2009 Medicare budget was \$424 billion dollars. If Senator Specter is correct in his assertion then Medicare fraud accounts for over 10% of budgeted expenses. But is Senator Specter correct? He offered no explanation as to how the fraud numbers were derived.

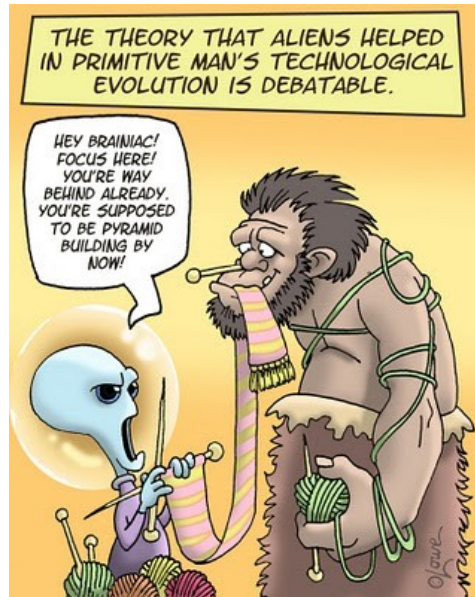
I find myself skeptical of Senator Specter's numbers. If he is wrong and is vastly overstating the problem of fraud, then the harm is relatively minimal except for the distasteful matter of misinformation which has been a virulent component of the Health Care Bill debate.

On the other hand Senator Specter might be correct or even be understating the problem. What then and how can this

situation be addressed?

If the matter of fraud is as vast as he asserted would it not appear that massive systemic failure on the Department of Health and Human Services to conduct audits has occurred? But how was that \$45 Billion fraud number derived? To arrive at a number, unless it is merely a guess from thin air, one must have assembled a collection of facts and figures. How else can it be done? Clearly having a collection of facts and figures on this matter would suggest that the identities and deeds of many fraudsters, major and minor, is known and corrective measures could be exerted. Yet massive fraud seems to amble along unimpeded. Something is desperately wrong.

I am not sure if fraud detection and prevention are, were, or will be part of the Health Care bill, but I am a bit baffled as to why they should be. If fraud on a massive scale is indeed being committed should not the Justice Department already be vigorously investigating and making known the fact that they are investigating, prosecuting, and exposing criminal practitioners? That alone should deter more timid fraudsters while major hardcore players are prosecuted. Is an Act of



Cartoon by Dave Lowe
<http://www.paraabnormalthecomix.com/>
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Most of the arguments to which I am party fall somewhat short of being impressive, knowing to the fact that neither I nor my opponent knows what we are talking about. - Rodney Dangerfield

Congress really needed to accomplish this other than to allocate funds to empower Justice Department audits and prosecutions? If an Act of Congress is truly needed then surely it could be quickly enacted as standalone legislation not attached to that monstrous omnibus Health Care Bill.

If fraud to the tune of \$45 Billion in Medicare alone does truly exist a Congressional investigation of the Department of Health and Human Services is surely in order, and perhaps even an investigation of Congressional oversight of this matter would in itself be a worthy pursuit.

Homeopathy and the English Language

"There have been two great revelations in my life: The first was bebop, the second was homeopathy."---Dizzy Gillespie, great jazz musician, (1917 - 1993)

The New Zealand Skeptics are engaged in an educational campaign to discourage pharmacies from selling homeopathic remedies or to at least not display homeopathic products next to legitimate over the counter medications. If you have any interest in homeopathy you could hardly do better then to inspect the NZ Skeptics website:

<http://www.skeptics.org.nz/>

Vicki Hyde, chair entity of the NZ Skeptics at that website writes:

"Homeopathy involves diluting a material until there isn't anything left of it at all - the NZ Council of Homeopaths have admitted that. But we know 94% of homeopathic customers aren't aware of this. They think their expensive bottle of drops actually contains the ingredients listed on the label- not water which once upon a time had some of that in it," says Skeptics Chair Vicki Hyde. "Stocking it next to genuine medical products gives homeopathic products credibility which they don't deserve."

In an e-mail correspondence about this matter Vicki wrote:

"....given the that focus of the current issue on homeopathic products is the inappropriateness of their sale by harmacies, we think that a different action would make far more sense than simply offering to do a homeopathic consult on one person."

I was immediately curious. Harmacies? I questioned Vicki. Was this a pun or typo? She assured me that it was a typo but does not that typo lend itself to some sweet and appropriate little additions to the English language?

harmacy, harmacist, harmaceutical

Meanwhile NZ Skeptics remain engaged in a worthy quack-busting campaign. Perhaps we can follow suit in Philadelphia and step up our efforts. It is rumored that PhACT president Eric Krieg, several years ago, did consume an entire bottle of homeopathic sleeping pills at the very beginning of a radio interview with very predictable results.

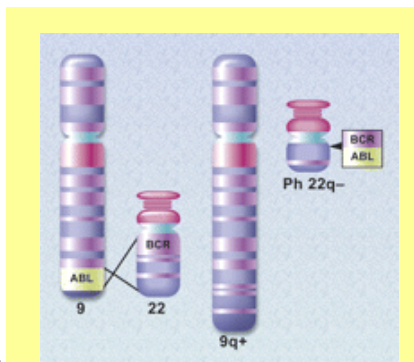
The Philadelphia Chromosome

As skeptics we often tend to present news and criticism of outrageous medical practices, quacks, and dubious cures, but here is a story of a major discovery in medical science that occurred in Philadelphia 50 years ago.

In 1960, Peter Nowell, a young doctor at the University of Pennsylvania Medical Center, while experimenting with a new technique to examine cancerous cells happened to observe a defective chromosome in a sample from a patient afflicted with CML (Chronic Mylogenous Leukemia). At that time realization of the importance of the Philadelphia Chromosome discovery was not fully appreciated, in fact, it was not until the mid-1950's that scientists proved that humans had 46 chromosomes. As time and technology moved on the significance of this discovery was gradually being realized.

The defective chromosome, number 22, eventually became known as the Philadelphia Chromosome and was linked with chromosome 9, also defective because of translocation, a process whereby chromosomes share genetic material. In this case translocation between chromosomes 9 and 22 is observed in 95% of CML patients. This abnormality is not a specific diagnostic for CML as it is also observed in other forms of blood cancers such as ALL (Acute Lymphoblastic Leukemia) in adult and pediatric cases, and occasionally in AML (Acute Myelogenous Leukemia).

This discovery was slowly accepted as is the case for many major scientific breakthroughs. Eventually the Philadelphia Chromosome proved to be the first gene-based cause of cancer. Intensive research, much of it performed at University of Pennsylvania, has led to deeper understanding of chromosome abnormalities and development of genetically targeted cancer drugs and more precise diagnostic capabilities. At some point, these drugs may make it possible to



Schematic diagram of the translocation that creates the Philadelphia chromosome. The ABL and BCR genes reside on the long arms of chromosomes 9 and 22, respectively. As a result of the (9;22) translocation, a BCR-ABL gene is formed on the derivative chromosome 22 (Philadelphia chromosome).

avoid the pain and risk of a bone marrow transplant in the treatment of myelogenous leukemia.

For his discovery Dr. Nowell was presented with the Lasker Award in 1998. The Lasker Award is one of the most prestigious honors bestowed upon scientists and often is the forerunner of a Nobel Prize.

An article about discovery of the Philadelphia Chromosome written by Peter Nowell can be found here:

<http://www.jci.org/articles/view/31771/version/1>

An interesting history of Dr. Nowell's discovery and subsequent expansion and refinement by other scientists can be found at this website:

http://www.laskerfoundation.org/awards/pdf/1998_nowell.pdf

More genetic based cancer research

See Page 16 for an update on a new gene based treatment for leukemia developed recently at University of Pennsylvania.

High School Science Fairs

In the May/June 2009 Phactum we reported that our president, Eric Krieg, had participated as a judge at the Delaware Valley Science Fair, which included middle schools and high schools in Bucks County, Pennsylvania in March of that year. Eric awarded a \$100 cash prize, collected from members of



PhACT's Council, to students who he felt best exemplified those virtues we call "Critical Thinking".

This worked out very well and in the July/August 2009 Phactum we set a goal of \$300 to present cash prizes to outstanding students at the 2010 science

fair. This year, Eric will again officially be a judge and at least two other PhACT folks, Tom Napier and me, Ray Haupt, will be present as observers.

We are grateful to all those who did contribute and we raised \$318 of which \$300 will be distributed in the form of three \$100 prizes. The remaining \$18 will be applied to the 2011 Prize Fund.

In February we received an additional \$85 in donations thus giving a total of \$103 already available for 2011 Science Fair awards. This creates a delicious dilemma: what should be our goal for 2011 and should we expand out efforts to include another county?

I wish to solicit opinions, ideas, contributions, and active participation from Phactum readers as to where we should go with this project.

It so happens that the venerable Academy of Natural Sciences has been hosting the George Washington Carver Sci-

ence Fair since 1979. See Page 8 for more details about that. Perhaps PhACT could have some involvement with the George Washington Carver Science Fair as well as the one in Bucks County.

For still more information about Science Fairs, the website of **Delaware Valley Science Fairs** is a very complete resource on the matter: <http://www.drexel.edu/dvsf/>

Conspiracy Theories

The February PhACT meeting theme "**Conspiracy Theories is Science**" certainly had something for everyone and Dr. Ted Goertzel from Rutgers University presided over a most interesting lecture and Q&A session. As a bunch of skeptics and critical thinkers we must resist the hype of irra-



tional fear and far fetched conspiracies, but folks, I tell you there is **something weird going on**. At the upcoming PhACT Meeting on March 20, 2010 Professor Lionel Tiger, from Rutgers University, will be discussing "**The Decline of Males**". How odd ... two major professors in a row from Rutgers University being presenters at PhACT! Is there a Rutgers Mind Control Conspiracy in process? A devious attempt from New Jersey to implant Critical Thinking skills in Philadelphia? Come to the meeting and form your own opinion on those matters and please, send letters and articles to express your opinions. Don't forget your tin foil hat!!

It is incumbent on every generation to pay its own debts as it goes. A principle which if acted on would save one-half the wars of the world. - Thomas Jefferson (1743 - 1836)

February 2010 Meeting Report

By Becky Strickland

Rutgers professor Dr. Ted Goertzel spoke about conspiracy theories at our February meeting. He began with a partial list of current conspiracy theories; the moon landing hoax (yes, still!), star visitors on the dark side of the moon, aids was created by the CIA to target gay men and African Americans, the US government was involved in the World Trade Center attack, and crop circles, to name a few. My personal favorite is 'Obama is not a US citizen'. For this to be true, the leaders of the Republican Party would have to be in on the conspiracy.

Goertzel described various subgroups of conspiracy theorists and their methods.

Spreading easily through the internet (they can't say it if it's not true, right?), conspiracies are most successful in politics, religion and journalism. They are less successful in science, which promotes peer review. Although some credentialed scientists have led conspiracy theories, most scientists change their views when new evidence is introduced. When conspiracy theorists are asked for evidence, they often offer additional conspiracies, claim that absence of evidence is proof of the conspiracy, or insist

the doubter disprove the conspiracy.

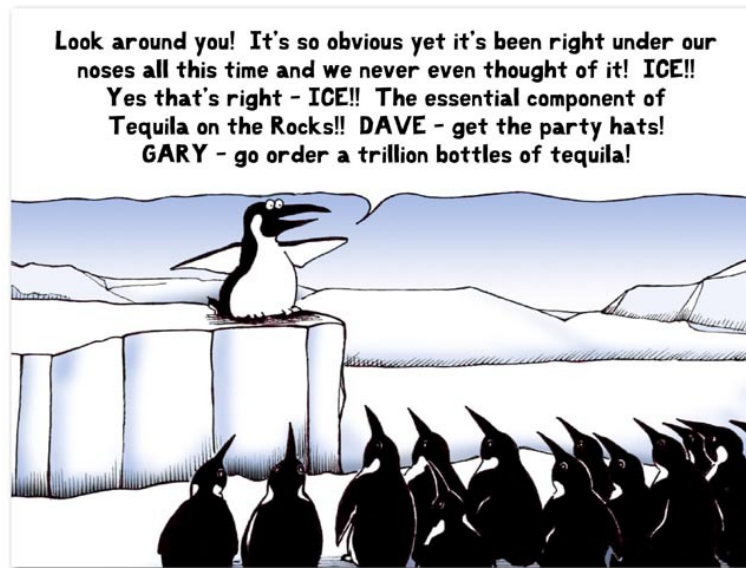
Goertzel noted there is very little scholarly research on this topic. It would be interesting to study whether conspiracy theorists are more likely to have a paranoid personality disorder, or score at the extreme end of 'openness to experience' (one of the Five Factor personality traits).

In the absence of scholarly research, there are some fun books on the topic. Try *The Rough Guide to Conspiracy Theories*, McConnachie & Tudge. First ed. 2005, Second Ed. 2008, *The Mammoth Book of Cover-ups, Lewis, or Debunked!: Conspiracy Theories, Urban Legends & Evil Plots of the 21st Century*, Richard Roeper.

It is easy to think that conspiracy theories and false beliefs are harmless if they don't interfere with one's life. See www.whatstheharm.net

for another view. For information on current political conspiracies, see www.factcheck.org.

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Global warming is a government conspiracy designed to prevent innocent little penguins from enjoying themselves.

Cartoon by Nick D. Kim, <http://www.lab-initio.com>
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George Washington Carver Science Fair

Every February and March, 800 to 1,000 Philadelphia school children participate in the George Washington Carver Science Fair, sponsored jointly by Temple University, The Academy of Natural Sciences, The School District of Philadelphia, and The Archdiocese of Philadelphia. The largest of its kind in the country, the fair provides opportunities for students to gain enriched learning experiences through scientific inquiry and discovery. It is open to all students in grades four through twelve who attend Philadelphia County public, charter, parochial and private schools, as well as to home schooled students residing in the county.

From the very beginning, The Academy of Natural Sciences has been an active partner of the George Washington Carver Science Fair. The fair has been held at The Academy since 1979, but due to growth in participation, grades seven through twelve are now held at Temple University. The Academy continues to house the elementary portion of the competition and its awards ceremony. Students who participate in the Science Fair and who are entering 4th through 6th grade can apply for the Carver Summer Scholars Camp at the Academy. For more information, contact Hollie Barattolo at 215-405-5061 or barattolo@ansp.org.

For information and dates to the George Washington Carver Science Fair please visit the Fair's website at www.temple.edu/carversciencefair/.

Verma's Little Book

a review by Tom Napier

When I buy a book it is usually with the intention of learning something from it. Once in a while it is with the hope that, through me, others will learn. It was with the latter motive that I picked up a copy of a small book with a long title, "The Little Book of Scientific Principles, Theories, & Things." Its author is Australian journalist, Surendra Verma. It first appeared in 2005 and is now sold as a "Bargain book" by Barnes & Noble for \$6.98.

This inch-thick book is an excellent non-technical reference for the layperson interested in science who has been overwhelmed by jargon. It won't tell you how to apply a principle but it does explain what it is and why it matters. Each page or so lists a significant scientific principle, giving the name of its discoverer and the date it was first thought of. This is followed by a short summary of its importance.

The remainder of each page or page and a half puts the principle and its discoverer in their historical context. If anecdotes, possibly apocryphal, are your meat and drink you will be satisfied here. Theories are listed in chronological order but there is also an extensive index. An appendix defines "The Scientific

Method" as a "technique of inquiry" and lists the sequence of its operations. The appendix includes a short glossary which, for example, clearly differentiates a theory from a hypothesis. Not surprisingly, most of the principles listed relate to physics or mathematics but chemistry and biology make their contribution.

I was unaware that the traditional definition of a species dates from one John Ray in 1686. I also found that the theory tested by Stanley Miller, that life could have originated in the atmosphere of the early Earth, was suggested in 1936 by Aleksandr Oparin.

One or two essays have slight connection with science. Isaac Asimov's Three Laws of Robotics have an entry and so has Murphy's Law. A number are devoted to theories that have since been debunked. One has to read the text to find that the concept described in the first paragraph has since been superseded. The essay on the Star of Bethlehem says that Kepler computed that there had been a triple conjunction of Jupiter and Saturn in 7 BCE. He had proposed this as a mundane explanation for the Star. Other theories are mentioned but it is only as an afterthought that the author suggests that the Star

could have been "a myth adduced by overzealous partisans." As skeptics we should always ask "Is there a real phenomenon to explain?" before proposing solutions.

John Ray (1628 - 1705) was an eminent naturalist, influential philosopher, and a theologian. Ray is often referred to as the father of natural history in Britain.

Entering Cambridge University in 1644, Ray rapidly became expert in languages, mathematics, and natural



science; he became a Fellow in 1649, a Lecturer in 1651, and a junior Dean in 1658. In 1660 he was ordained a priest in the Anglican Church. Ray did experimental work in embryology and plant physiology; among other things, he proved that the wood of a living tree conducts water. His researches received so much renown that Ray was inducted into the newly-

formed Royal Society of London, one of the world's first scientific societies, in 1667. Ray published many systematic works on plants, birds, mammals, fish, and insects, in which he brought order to the chaotic mass of names in use by the naturalists of his time. Ray searched for the "natural system," a classification of organisms that would reflect the Divine Order of creation.

A devout Christian, Ray expounded his belief in "natural theology," the doctrine that the wisdom and power of God could be understood by studying His creation, the natural world. This doctrine can be traced back to the Bible, but Ray expressed it so fully and clearly that he started a long tradition of natural theology in England and abroad. As Ray wrote in 1660:

"There is for a free man no occupation more worthy and delightful than to contemplate the beauteous works of nature and honour the infinite wisdom and goodness of God."

**"A subtle thought that is in error may yet give rise to fruitful inquiry that can establish truths of great value."
— Isaac Asimov (1920—1992)**

Being only too aware how easily science perverts latch on to seeming loopholes, I'll mention some small errors that could be misconstrued. For example, the essay on radiocarbon dating says, "Living things go on absorbing carbon-12 and carbon-14 until the time of their death. Once an organism dies, carbon-14 begins to decay." The first sentence is correct but the second one implies that an organism's death affects the decay of atoms. (We might call this the inverse Schrodinger's Cat effect. Yes, Schrodinger's Cat is mentioned in the book.) A better explication would be that during life an equilibrium exists between the absorption and the decay of carbon-14. At death the absorption of fresh carbon-14 ceases while the body's existing stock continues to decay.



Atlantic centric upside down map.
West is to the right.

In describing the conflict between Edison and Tesla over whether electrical power should be DC or AC the author implies that DC (direct current) transmission is inherently more lossy than AC (alternating current) transmission. The opposite is the case. The reason AC is used today is that the power loss of a transmission line increases as the square of the current flowing. A transformer lets you send a given amount of power at a higher voltage but at a much lower current. At the destination the high voltage is transformed back down to 110 V. The transformers that raise and lower the power voltage are inherently AC devices, they don't work with DC. I found the essay on the Coriolis effect confusing.

Among other things, Verma illustrates the Earth with south at the top. This is his prerogative as an Australian but he also shows its rotation as east to west. I draw the line at that.

Verma gets some details wrong. The section on probability mentions the puzzlement of the sixteenth century Chevalier de Méré. He had won consistently when he bet that he would throw a six in four rolls of a die. He then started betting that he'd throw a double-six once in 24 rolls of two dice and found he was losing. His enquiry of Blaise Pascal about why this should be led to the development of

probability theory. Verma says the second bet was to throw a six in 24 rolls. This is obviously wrong as the probability of rolling one six is quite high. By the way, a virtually identical story is told of Samuel Pepys and Isaac Newton.

Finally, here's the statement about Euclid's five postulates which set me off looking for nits. "Many mathematicians do not consider the fifth postulate (or parallel postulate) as a true postulate, but rather as a theorem that can be derived from the first four postulates." This may have been true two hundred years ago. We've known since the middle of the nineteenth century that Euclid's fifth postulate is an independent axiom which determines the type of geometry being described. As defined by Euclid, the postulates apply to plane geometry. Alternative fifth postulates lead to consistent geometries that hold true on surfaces that are curved like a sphere or a saddle.

If you want to dig deeper into scientific principles there are better sources. For a quick, well ordered and concise summary, Verma's little book will do the job.

Tom Napier has been a stalwart skeptic and member of PhACT for many years and delights in exposing the outlandish claims of pseudo-scientists and charlatans. Tom made his living as a physicist, writer, and scientific consultant. After coming to Pennsylvania he worked mainly in electronic design and management. He is now retired although still doing occasional consulting jobs.



One of Euclid's earlier propositions

Cartoon by Nick D. Kim, <http://www.lab-initio.com>
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Apocalypse 2012, The Farce

by Paul Schlueter III

"It's almost impossible to consume popular media these days without hearing about the next apocalypse, said by some to be due on December 21, 2012, pursuant to "ancient Mayan cosmology."

It doesn't take much skepticism to discount that claim, but Archaeology magazine was kind enough to provide readers with a thorough analysis of what actual Mayan archaeology can tell us about that date. For their article, see Archaeology, Nov/Dec '09, p. 30, "Apocalypse Soon?" by Anthony Aveni. www.archaeology.org

First off, critical thinkers understand the fallacy of "ancient wisdom's superiority." We may have lost details of the exact ingredients and processes used to make a particular sample of ancient bronze, but we know far, far more about materials in general, and metalurgy in particular, than those ancients did. Using spectrometry, we can analyze bronzes with unprecedented detail. There's even a device called a synchrotron (also described in that issue of Archaeology), a little cousin of the Large Hadron Collider (LHC), which accelerates an electron stream to near light speed, producing X-ray energies that can non-destructively analyze materials down to the molecular level.

Quite simply, there is no field of science in which modern knowledge is less-advanced than the knowledge it was built upon tens, hundreds, or thousands of years ago. Yet, New Age gurus want us to believe that the Maya, who observed the cosmos by naked eye alone (admittedly, quite well), were somehow able to predict anything more complex than the cyclic orbitings of celestial bodies. They sell many books, and even an upcoming blockbuster movie, banking on the general layperson's relative ignorance of the details of Mayan cosmology. Here's some of the relevant information, to dispel a bit of that mystery.

The Mayan calendar is an irregular "base 20" register, encompassing a total cycle length of 1,872,000 days, or 5,125.37 years. The current cycle began on what we would call August 11, 3114 B.C., a date hundreds of years PRIOR TO the earliest evidence of Mayan culture. Stela 25 at Izapa (Pacific coastal Mexico), believed to depict a creation scene

linked to the beginning of a new calendric cycle, was apparently made ca. 400 B.C., during the pre-Classic Maya period, some 2,700 years after the calendric cycle purportedly began. By all rigorous analysis, the Maya only began counting their dates according to the Long Count many centuries after its "Day Zero" occurred, in an effort to link their own royal heritage to "ancient cosmic events," thus deifying their rulers.

The Long Count is structured as a series of five numbers, separated into different glyphs. In our modern writing, it can be represented as digits and decimals. Examples from the Archaeology article are 13.0.0.0 for the Day Zero (first day of a cycle) for Aug. 11, 3114 B.C. Also, "12.8.0.1.13 corresponds to July 4, 1776." January 1, A.D. 1 (another date arbitrarily chosen to begin a calendar, centuries after it had passed) would be represented as 7.17.18.13.3

The last day of the current Long Count cycle will be 12.19.19.17.19, on December 21, 2012, following which the cycle begins again with the Day Zero date of 13.0.0.0.0

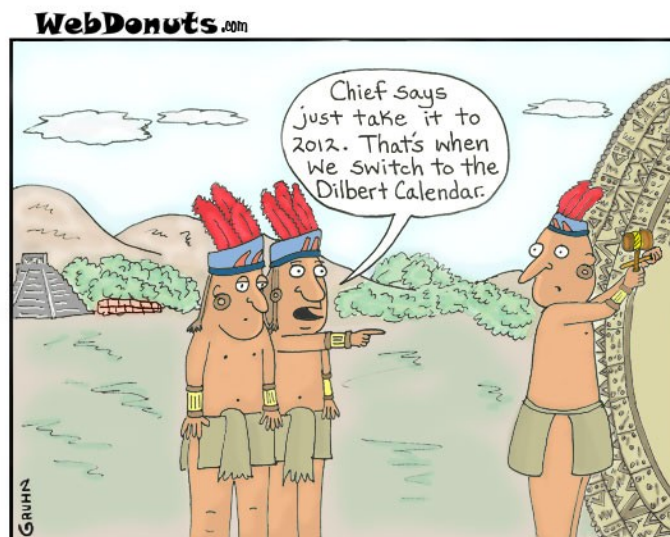
In the Maya calendar, each day is a "kin". The month is 20 kins long, called an "uinal." Their year (360 days) is 18 uinals long, called a "tun." Every 20 Tun years (which strikes me as a handy period for counting human

generations), the Maya recognized a "katun" of 7,200 days.

Every twenty katuns (400 Maya years, or 144,000 days), there was a "baktun." There are 13 baktuns to the Long Count cycle, totaling 1,872,000 days, or 5,125.37 years.

Mathematically, this calendric system is a bit irregular, but straightforward; you just have to get used to counting your kins (the number furthest to the right) in uinals (second from the right), tuns (the middle number), katuns (second from the left), and baktuns (the number furthest to the left). It's really no more difficult to learn than our days, weeks, fortnights, months, years, leap years, decades, centuries, and millennia.

Here's another important point. We begin a new calendric cycle each January 1, just a few days away from the winter solstice. We recognize it with parties and a holiday, but we don't really think of it as a re-start date for the cosmos. It's just the beginning of another (approximate) calendric solar



Cartoon by Gruhn
gruhn@webdonuts.com
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year cycle. Sure, there were woos who were certain that doomsday would arrive on Jan. 1, 2000 (Y2K, if you'll recall), an ignorant oversight that assumed we began counting years with a year zero (the current millenium actually began on January 1, 2001), combined with interpretations of religious myth that independently predicted the end of a supernatural being's rule after 1,000 years (notably, with no precise start date).

The Maya left no clear record of any "prediction" of catastrophic change expected for 12/21/2012, either. The modern anthropological interpretations of Mayan ideology describe a "cycle of creation", perhaps loosely tied to the Sun's periodic alignment with the plane of the Milky Way, but astronomical alignments have occurred regularly for billions of years without actual catastrophic effect. Nowhere is there a glyph that specifically predicts a meteor strike, an earthquake, a volcanic eruption, or our Sun's collapse into a nova. In fact, the closest we get is the 14th-century Dresden Codex (id., p. 32), in which water appears to gush from the mouth of a

The Dresden Codex depicts the world tree, (Ceiba or Yaxché) emerging from the sacrificed body of the maize god. The glyphs at the left name him. The Milky Way/World Tree is the route between the heavens, earth, and the Underworld.



The Dresden Codex is one of the few collections of pre-Columbian Mayan hieroglyphic texts known to have survived the book burnings by the Spanish clergy during the 16th century (others include the Madrid, Paris, and Grolier codices). It contains astronomical calculations, eclipse-prediction tables, the synodical period of Venus of exceptional accuracy.

mythical "sky caiman," interpreted to represent "a catastrophic flood." As Aveni notes, "floods are rarely part of New Age predictions for 2012."

However, floods are certainly common enough that one might occur on 12/12/2012, which will be proof enough for any New Age guru who might be held to account for his dire predictions.

In the final analysis, there is no reason to stockpile survivalist goodies for 12/12/2012. Still, that won't stop publishers and filmmakers from cashing in. I would think that our greatest worry on 12/12/2012 will be trying to identify and impede the various terrorist and suicide cults who are likely to take this apocalyptic bunkum as serious license for mayhem.

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



Why Haven't We Found Other Earths?

by Paul Schlueter III

Every so often, conversation turns to the search for life beyond our own planet. Nearly everyone knows that we have robotic machines exploring Mars, and that one thing scientists would love to find there would be definite signs that life may have existed on our nearest neighbor planet.

Many people have also heard about the ongoing efforts to find planets outside our own solar system, but since all we've heard about are extremely large planets, orbiting their respective stars very closely, some people have come to believe that there must not BE any Earth-like planets out there to find. For those with a psychological or religious need to feel that our planet, and even life itself, are special and alone in the cosmos, I doubt anything short of setting them down on another Earth will convince them of the possibility. However, there are some very good reasons why we haven't actually found another planet like our own, and I'd like to discuss a few of them for those who are truly curious.

We have located over 400 "exoplanets" now. It's an ongoing effort, and it's such a new field of study that many people currently studying astronomy in college were actually born before the first exoplanet was found! There are two basic methods being used in the search for exoplanets; the oldest is to find stars that "wobble" as they are tugged back and forth by the mass of an orbiting planet, and the newer variation uses periodic dimming of starlight to spot cases where an orbiting planet "transits", or passes across in front of, its star. So far, astronomers have only been able to actually image the ultra-dim reflections of light from an exoplanet in one case; generally, the planets we've found are so close to their stars that starlight overwhelms any light the planet may reflect. We're developing "masking" techniques that can digitally block out the light of the star, allowing us to see nearby sources. The planet we've imaged may actually turn out to be a small dwarf star, glowing with its own

dimmer light, but we discovered its dominant partner by one of the methods mentioned above, not by spotting the body itself.

The problem we're still struggling with is the ability to detect the subtle effects of an exoplanet on its parent star. Pretty much by definition, planets are very much less

massive than their stars. According to current understanding of how planets form around stars from huge discs of orbiting space dust, it's just not very likely that a planet will achieve anything close to the mass of its star, so the opportunity for a star to get a super-huge planet would be limited to extraordinary situations, such as capturing a planet that had formed elsewhere and managed to drift free of its home orbit.

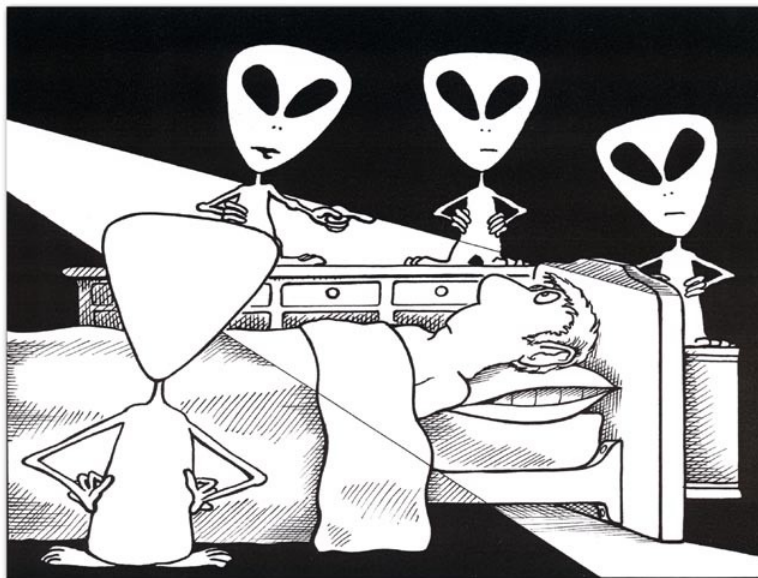
We haven't found such a situation yet, to our knowledge.

Since the wobble of a star is the factor that we're usually noticing, we have

to think about how a planet's mass can cause its star to "wobble." There are two ways that a planet can cause greater wobble; either it has greater mass, or it orbits more closely to the star. This means that the largest exoplanets, orbiting closest to their stars, are the ones we're most likely to notice! A very heavy planet, with a very close orbit, will cause its star to wobble much more dramatically, and also rather quickly.

As the mass of an exoplanet decreases, the wobble effect becomes much less noticeable. As the planet's distance from its star increases, the period of its wobble diminishes. Orbital speed is mathematically linked to the masses of the star and planet, and the distance between them, so that astronomers can discover the greatest possible mass for each exoplanet from knowing the time it takes it to complete each orbit.

To detect the wobble of a star, it's better if we can see several complete orbits in a single night of observation. That



"Six years ago you received a complimentary set of steak-knives. You thought they were FREE, didn't you Jimmy...? Well, NOTHING in this Universe is really free, Jimmy, NOTHING. We now want payment for the steak-knives..."

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

implies some seriously quick orbiting! For us to detect the wobble on a sun like ours that comes from a planet like Earth, we would literally have to track the star's precise position for at least one full year, because that's the period of Earth's orbit. Such a slow wobble is going to be extremely difficult to detect, just because it happens so slowly.

Another aspect of this difficulty is Earth's relatively low mass. Yes, Earth causes the Sun to wobble with each yearly orbit, but the distance (amplitude) of the wobble is very small; even if the period were very quick, it would still be difficult to spot the very subtle amplitude of wobble. When you combine the low amplitude and slow period, you begin to get an idea of why it has been so difficult for astronomers to find stars with an Earth-like planet. It's not that they aren't there, it's just that the characteristics we're able to observe are so subtle we cannot yet detect them.

Here's another way to think of it. Take the second and minute hands off an analog watch, and try to watch the motion of just an hour hand; kind of tough, isn't it? Still, you can come back after a few hours, and clearly see that the hour hand points in another direction. Now, imagine a disc, in place of that hour hand. The center hole of the disc would be just a few thousandths of an inch off-center. Now, if that disc rotated quickly, you'd be able to see it visibly "wobble" as it rotated. Slow that rotation down, though, and it becomes extremely difficult to see, because you can't easily tell the rotational degree of an off-center disc. The less off-center the disc, and/or the slower the rotation, the more difficult it is to observe the "wobble" effect. That's exactly the problem astronomers have.

The effort continues. The Jan. 16, 2010 Science News describes the most Earth-like exoplanet yet found, in an article by Lisa Grossman. The planet, called GJ 1214b, orbits a red dwarf star 42 light years from Earth, and is 2.7 times the diameter of Earth, with 6.5 times our mass. GJ 1214b is called a "super-Earth", a category including exoplanets in the range between 5 and 10 times the mass of Earth, and this is only the second transiting super-Earth we've found. It's the first super-Earth that is close enough that we can study its

atmosphere when it transits its star.

By observing the transit, we know the planet's diameter (it blocks a measurable percentage of the star's light.) By measuring the star's wobble (with the European Southern Observatory's High Accuracy Radial Velocity Planet Searcher, the coolest toy I've heard of in months,) David Charbonneau (from the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass.) and his colleagues have been able to calculate the planet's mass, and then its density, which turns out to be nearly twice the density of water. This leaves many possibilities open for the planet's composition.

GJ 1214b orbits its star once every 38 hours, and it is 2 million kilometers away from the star (Mercury is 30 times further away from the Sun!) Because the star is so dim, the planet remains relatively cool, at about 2800 Celsius. Because of its mass (gravity), some scientists believe that the planet's atmosphere is dense enough that

liquid water may be present on its surface. Debate is ongoing about how to determine the proportions of iron, rock, and lighter materials of such exoplanets.

As technology advances, astronomers will obtain equipment that is ever more sensitive, and eventually we hope to obtain the ability to detect the subtle signs of an Earth-like planet. We just haven't reached that point yet. However, the continuing discovery of super-Earths, only a figurative stone's throw away from the goal, suggests that the upcoming discovery of Earth-like exoplanets is very likely. In fact, it appears that planets exist in an extremely wide variety of sizes and orbital conditions, and that only our technology limits our ability to locate them in our galactic neighborhood. Once we begin finding Earth-like exoplanets orbiting Sol-like stars at about the right distance, we'll look for a planetary wobble, possibly indicating a Luna-like moon (currently thought to be an important factor in creating life.) If we find such a rock out there, it just might be a good place to look for other intelligent life in our universe.

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Cartoon by Chris Madden
<http://www.chrismadden.co.uk/moon/jigsaw.html>
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Gambling and the Law®: More Pathological Poker

By Professor I. Nelson Rose

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A couple of columns ago, I listed the 15 questions I developed to test whether a poker player is a compulsive gambler.

Based on the comments I received and my own observations of professional poker players, I would like to add an additional question:

16. Do you feel you always have to be in action, even when you are not playing poker, so that you often bet on games and propositions that are more luck than skill?

Readers wondered at my reasoning behind some of my questions. My columns have a short word limit, so I could not go into detail on the questions. Here are some additional comments:

1. Play for stakes you know are too high – I think a compulsive gambler plays mainly for the thrill of gambling. If he were merely a poor player, he would not recognize that he is out of his league.

2. Can't quit when behind -- Chasing is probably the single most common characteristic of problem gamblers.

3. Can't quit when ahead -- This is less common, but the operative word is can't in "feel you can't quit." Compulsive gambling is classified as an impulse control disorder. A winner who has an irrational, irresistible urge to continue while ahead is as much of a compulsive gambler as the loser who chases.

4. Losing because of bad beats -- Compulsive gamblers usually blame others for their losses.

5. Often get angry at other players -- A major symptom of compulsive gambling is anger.

6. On tilt more than once -- I should have worded this, "Have you gone on tilt often?"

7. Increasing bets when losing is the definition of chasing.

8. Often stay in too many hands -- Again, I was trying to find players who are more attracted to the risk, rather than the cerebral, side of poker.

9. Drinking -- there is a very high correlation of problem

gambling with problem drinking.

10. Forget important social obligations -- Compulsive gamblers put gambling first, at the expense of the rest of their personal lives.

11. Misled or lied about how much poker you played. Compulsive gamblers are liars.

12. Increasingly using the ATM in casinos -- Getting cash beyond what the player had budgeted. Considering the outrageous fees and interest rates on cash withdrawals from these machines, I would say that anyone who used an ATM in a casino more than once is either a compulsive gambler or a very poor poker player.

13. Lied to get money. Compulsive gamblers are constantly conning others to get money.

14. Feel bad about things you have done because of poker. My first draft had as an example failing to pick up a child from school. I am trying to get to the compulsion to continue playing, even at the cost of personal obligations.

15. More interested in poker than sex. I didn't mean thinking about it 8 hours

a day. Gambling to a compulsive becomes more important than everything else. Spouses often complain that they thought the compulsive gambler was having an affair. The problem gamblers' response is that they did not want to take the time away from gambling to have sex.

Send your comments to rose@printmail.com

Professor I Nelson Rose is recognized as one of the world's leading experts on gambling law and is a consultant and expert witness for players, governments and industry. His latest books, Internet Gaming Law (2nd edition just published), Gaming Law: Cases and Materials, and Blackjack and the Law are available through his website:

www.GamblingAndTheLaw.com



University of Pennsylvania Researchers Find Genetic Link to Leukemias with an Unknown Origin

Findings Provide Clues for Treating Thousands of Patients Diagnosed Each Year

This article is from a Penn Medical Center News Release February 18, 2010

Although leukemia is one of the best studied cancers, the cause of some types is still poorly understood. Now, a newly found mutation in acute myeloid leukemia patients could account for half of the remaining cases of adult acute leukemia with an unknown origin.

"The molecular biology of leukemia has been studied for the last 20 years and we thought we had found most of the common genes for leukemia," comments senior author **Craig B. Thompson, MD**, director of the **Abramson Cancer Center** of the **University of Pennsylvania**. *"Now we're able to point to a distinct type of mutation for half of the remaining leukemias for which we didn't know the cause and between one-quarter and one-third of leukemias in older patients."* The findings are described online this week in *Cancer Cell*.

Using samples from a Penn tissue bank of acute myeloid leukemia (AML), Thompson and colleagues found that AML patients have increased levels of a molecule called 2HG. AML is a quick-moving, deadly cancer that starts in the bone marrow and soon moves into the blood. The increased amounts of 2HG stem from a mutation in one of two related metabolic enzymes, IDH1 or IDH2.

Screening for elevations in 2HG in the tissue bank, the team found that *IDH1* and *IDH2* mutations are observed in over 23 percent of the AML patients studied. A shared feature of cancer-related *IDH* mutations is increased production of 2HG.

What's more, the *IDH* gene mutations are the first known cancer mutations that result in the creation of a protein with a new enzymatic activity. Most cancer-causing mutations make the mutated protein either overactive or inactive in performing its normal function. In contrast, the mutations in the IDH proteins give these enzymes the blueprint to create a new molecule not normally produced by cells. Interestingly, the researchers also found that *IDH2* mutations are more

common than *IDH1* mutations in AML.

Other gene-related causes of leukemia include breaks and reformations in chromosomes called translocations.

The ease with which the researchers were able to detect *IDH* mutations in tumor samples, and the ability to identify patients with these mutations due to the presence of increased 2HG gives hope for better detection of AML and suggests that blocking the production of 2HG might reverse the ability of the mutant genes to maintain the leukemic cells.

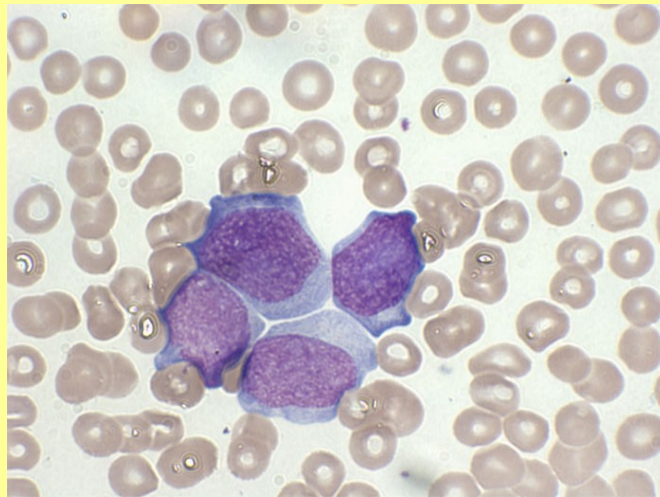
"If we're able to block tumors from producing 2HG, perhaps we would be able to stop the patient's leukemia,"

states Thompson. Exactly why 2HG production leads to leukemia is not yet clear. It does not appear to act like other cancer-causing metabolites which induce further mutations. One possibility raised in the manuscript is that 2HG accumulation may block the ability of the leukemic cells to differentiate into normal blood cells.

The research was funded in part by grants from the National Cancer Institute and the Abramson Family Cancer Research Institute.

Other co-authors in addition to Thompson include **Patrick**

Ward, MD/PhD student, and **Martin Carroll, MD**, from the Abramson Cancer Center, and Ross Levine, MD, from the Memorial Sloan-Kettering Cancer Center, as well as researchers from Agios Pharmaceuticals and Princeton University. Thompson is co-founder and consultant to Agios.



AML bone marrow showing immature leukemia cells.

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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, in **Lecture Room C2-28 in the Center for Business and Industry at the corner of 18th and Callowhill Streets**. Parking is easily available and is free for PhACT attendees at CCP events. 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, March 20, 2010 - The Decline of Males - Dr. Lionel Tiger, Professor of Anthropology at Rutgers University will discuss his book "The Decline of Males" presenting his views on the concept of "male bonding" and the apparent trend that women about to surpass men in social, economic, and reproductive status. We hope that you will join us for what should be a lively and controversial discussion. See Page 1.

Saturday, April 17, 2010 - TBA

Saturday, May 15, 2010 - Join us for a dinner where **Joe Nickell**, a popular writer and investigator at Skeptical Inquirer, will be our guest speaker. Stay tuned for more details.

Sunday, May 16, 2010 - For the more adventurous **Joe Nickell** and other PhACT folks will embark on an expedition to find the Jersey Devil in the New Jersey Pine Barrens. PhACT member **Don Nigroni** will be our guide on this adventure. All are welcome to participate. This event is free.

Friday, March 12, 2010 at 8:00 PM: Delaware Valley Mensa General Membership Meeting: The War of Northern Aggression lives on (in reenactments, anyway)

The O'Connell Guards, historically, was a pre-civil war militia company of mostly Irish railroad workers from Alexandria, VA. Along with The Emmett Guards, also from Alexandria, they had received special permission from the United States pre-civil war government to wear green uniforms. When the war started, these Irish companies (I and G) were attached to the newly formed 17th Virginia Infantry. They wore their green at Manassas Junction and formed their lines on the Confederate left at Blackburn's Ford. The 17th Virginia served the entire length of the war.

As a reenactment group, the O'Connell Guards, 17th Virginia, Company I is a part of the Fifth Regiment in The Army of Northern Virginia. This organization is made up of 10 regiments and has a membership of many thousands of soldiers and civilians along the eastern United States and Canada. The organization is over 30 years old, and when it puts out a maximum call for soldiers at a given event and takes the field it is quite an impressive sight.

Maury Harris started civil war re-enacting, marriage and golf ten years ago, all at the same time, which has kept him very busy. He is an amateur musician and plays harmonica, penny whistle and fiddle. He is the father of two.

The General Membership Meeting will be held at the Police Administration Building, 750 Race Street, Philadelphia, PA. This meeting is DVM's only activity specifically open to the public, so feel free to invite your friends and relatives. Door prizes will once again be awarded, sponsored by Chocolate. The dinner is at 6:00 and the meeting will begin

promptly at 8:00. The meeting is free.

PS: Don't let traffic on the Schuylkill Expressway interfere with attending. Consider taking SEPTA and exiting at Market Street East / Gallery, it is only a two block walk to the Police Administration Building. Contact Pete Stevens (pete.stevens@phila.gov) for more information.

Wednesday, March 17th at 6 P.M.

ST. PATRICK'S DAY: AFTER-WORK TOUR & TOAST Laurel Hill Cemetery, 3822 Ridge Avenue - Philadelphia, PA 19132

Though dead men tell no tales, there are two places that we can learn much about them: the wake-house and Laurel Hill Cemetery. Join us at the latter, as we celebrate St. Patrick's Day, while honoring the heritage and accomplishments of our proudest Irish souls, now gone to their final reward. 'Tis a festive occasion to be enjoyed by the living, for earth has no sorrows that heaven cannot heal! So, while we await healing, let us tip our hats, take our drinks, and expand our minds at Laurel Hill!

Join us on Wednesday, March 17th at 6:00 PM. In the spirit of a unified Ireland, the program will be led by Jerry McCormick of Six Counties' descent, and his counterpart rebel of native birth, Bill Doran. The beer will be plenty and the 'spirits' merry in our historic Gatehouse.

The program cost is \$25 per person. As space is limited, advance registration is required. Please call **215-228-8200** to reserve a space for you and your lucky lad or lass.



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

Wednesday, March 17, 2010 at 6:30 PM - The Friends of Lovett Memorial Library presents the 2010 Frank Wister Thomas Memorial Lecture. **Philadelphia historian and genealogist David T. Moore** will relate the story of the Lovett family of the Mt. Airy section of Philadelphia and how the library came to be. Refreshments at 6:30 PM, program at 7:15 PM. Lovett Memorial Library, 6945 Germantown Avenue, Philadelphia. 215-685-2095. Free.

Monday, March 22, 2010 at 7:30 PM. **Pierre Teilhard de Chardin: The China years.** With Kathleen Duffey, SSJ, Ph.D., Professor of Physics, Chestnut Hill College.

How did Jesuit paleontologist Pierre Teilhard de Chardin sustain his spirit under the burden of long years of exile and rejection by church authorities? What supports were available to him despite the fact that his efforts to live out a vision that he discerned to be of God were continually thwarted? In this lecture, Dr. Duffey will explore the clues to Teilhard's spiritual depth found in his letters to his family and friends and plumb more deeply our own source of spiritual strength.

This talk and all talks in Metanexus Science and Spirit lecture series are free to the public and will take place at 7:30 pm in Congregational Hall of Bryn Mawr Presbyterian Church, 625 Montgomery Avenue, Bryn Mawr. For more info: (484) 592-0304 or info@metanexus.net

Wednesday, March 24, 2010 - 6:00 pm – 8:00 pm
Jameson Sisters Bella Voce at Roberto's Trattoria, 700 Bethlehem Pike, Erdenheim, PA.

This is an intimate Italian restaurant. Ellen Tepper plays classical pedal harp Italian favorites with singer Terry Kane. If you thought these women could only play Irish music you have a pleasant surprise in store. Everything is on the menu from your favorite popular ballad to iconic opera arias. Jameson Sisters perform at this location every month on the 4th Wednesday. Reservations highly recommended, (215) 233-9955.



Saturday, April 10, 2010 at 3 P.M. - TITANIC'S FLOATERS: Recovery, Preparation, and Disposition. - Laurel Hill Cemetery, 3822 Ridge Avenue - Philadelphia, PA 19132

According to the statistics from the existing records of the White Star Line, managing company of the R.M.S. Titanic, there were 98 passengers destined for Pennsylvania on that fateful voyage in April of 1912. Of that number, 45 were from the Philadelphia area. Six of these are entombed or memorialized at Laurel Hill Cemetery.



Every year in April, Laurel Hill Cemetery commemorates the solemn anniversary of the sinking of the "Ship of Dreams." The event commences with a walking tour of Laurel Hill, where we visit the burial places of the Titanic passengers, and hear their unique stories. The tour continues at West Laurel Hill Cemetery,

where six additional Titanic-related men and women rest. Following the walking tours, a slide-supported presentation will highlight the connection between Philadelphia and the Titanic; this year's focus is not on the survivors or the bodies immediately recovered at the scene of the disaster, but on the bodies that later re-emerged from the depths. The evening is always capped off by a sumptuous feast that replicates the one served aboard Titanic on that final, fateful day.

Widener University Professor and Resident Folklorist, Dr. J. Joseph Edgette, hosts this annual event, which will take place starting at 3:00pm on Saturday, April 10, 2010. The cost is \$25 per person for the tours only, and \$75 per person for the entire package, including tours, presentation and dinner. Advance registration is required. Space is limited, so make your reservations early by calling 215-228-8200.

Wednesday, April 14, 2010 at 7:30 PM. - Metanexus Lecture: Peter

Dodson, Professor of Anatomy and Paleontology, University of Pennsylvania. **"God and the Dinosaurs"**. At Bryn Mawr Presbyterian Church 625 Montgomery Avenue, Bryn Mawr, PA.

"Evolution is God's way of creating. Dinosaurs are just as much a part of Creation as are the most elegant animals alive today. As a scientist I study Creation, which points to the Creator (Romans 1:20). As an evolutionary biologist, I study the laws by which the Creator has created over billions of years. I do not have to choose between faith in God and faith in science. I know that God's works are trustworthy (Psalm 33: 4). Truth cannot contradict truth. As Darwin correctly notes, there is grandeur in this view of life."

Saturday, May 1, 2010 Public Paranormal Investigation of Eastern State Penitentiary Cost : \$100 per person for 9 hours at the prison!! from 5pm - 2am. There will be a brief guided tour along with the history of the prison, then we will break off into groups and start investigating. you will be grouped with experienced investigators and learn how to perform a true paranormal investigation in one of the most active locations in our area. The best part is, all Proceeds are going directly to the Hospital Restoration Project at Eastern State! let's help preserve this piece of history! Details to follow. See the PIRA website:

<http://home.comcast.net/~parainvestigator/Index/Main.html>

Thursday, June 3, 2010 at 7:30PM Central Library, 1901 Vine Street. Born in Somalia and raised Muslim, **Ayaan Hirsi Ali** fled to Holland—where she eventually became a member of the Dutch parliament—to avoid a forced marriage. An outspoken advocate for women's rights and a staunch critic of Islamic extremism, Ali made a documentary about domestic abuse among Muslim women with director Theo van Gogh, who was subsequently killed by an Islamic extremist. Continuing death threats have forced her into hiding. Her first book, *The Caged Virgin*, was a collection of essays concerning the oppression of Muslim women. In *Nomad*—the follow up to her no. 1 bestselling memoir *Infidel* - Ali tells the story of her search for a new life in the United States. 215-686-5322 Cost: \$14 General Admission, \$7 Students

Tuesday, June 15, 2010 at 7:30PM Central Library, 1901 Vine Street. Called "America's foremost literary pugilist" by a reviewer for *The Village Voice*, **Christopher Hitchens** is a prolific and controversial writer, as well as a popular radio and TV commentator. A self-styled "radicalist," Hitchens is notorious for his strong opinions and conflicting views—he was against the Vietnam War and for the Iraq invasion. He has written books excoriating Mother Teresa, Bill and Hillary Clinton, and Henry Kissinger, as well as biographies elevating Thomas Jefferson, Thomas Paine, and George Orwell. His polemic against organized religion, *God Is Not Great*, was a no. 1 New York Times bestseller and a finalist for the National Book Award. Providing new insight into his life and beliefs, *Hitch-22* sheds light on the formative experiences and personal relationships with famous writers and political figures that helped make him the intellectual he is today.

Mr. Hitchens will be interviewed by Marty Moss-Coane, host of WHYY's *Radio Times* with Marty Moss-Coane. 215-686-5322 Cost: \$14 General Admission, \$7 Students

Saturday, May 1, 2010 at 10 A.M. NATURE IN THE NECROPOLIS: BIRDS AND BLOOMS - Laurel Hill Cemetery, 3822 Ridge Avenue - Philadelphia, PA 19132

Laurel Hill is our nation's first garden cemetery, and we will walk through this beautiful park-like landscape overlooking the Schuylkill River, while we learn about its history, and try to identify as many birds as possible of those that we see or hear. Near the end of migration season, we may still find some temporary visitors, as well as permanent residents and those who reside here for the whole summer. Share your knowledge or just enjoy nature all around you in the midst of the city. Bring binoculars. Bird book, notepad and pen are optional. Torrential rain cancels the program; drizzle does not.

The program cost is \$20 per person with discounts for members, seniors, and students. Children under 12 are free. For reservations: 215.228.8200 or tours@thelaurelhillemetery.org.



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

The Wagner Free Institute of Science announces its free science courses for Winter/Spring 2010. The courses run from five to ten weeks. Lectures are held in the evening and last approximately one and a half hours. The courses are taught on an introductory college level and are appropriate for adults wishing to enrich their knowledge of the sciences, as well as for motivated junior and senior high school students.

Introduction to Pollination Biology, Professor Tatyana Livshultz. Monday, April 5, 2010, beginning at 6:30 PM. 6 Mondays. Pennsylvania Horticultural Society, 100 N. 20th Street. This course will survey the science of pollination biology, including the discovery of plant pollinations in the late 17th century, plant adaptation to animal pollination and how they evolve, and the importance of pollination to human society. This course requires preregistration. To preregister, call 215-763-6529, ext. 23, beginning Monday, November 16, 2009.

Introduction to Birding in the Delaware Valley, Professor Clifford Henc. Wednesdays, April 7 - April 28, 2010 (6:30-7:45 PM) and Saturdays, May 1, 8 & 15 (3 field trips from 8:00-11:00 AM). Independence Branch of the Free Library, 18 S. 7th Street and three field trips to local parks. This course will provide an introduction to birding in the region, including when and where to bird, and how to identify species in the field. No preregistration required.

All courses, unless otherwise indicated, are offered free of charge. For full course information and syllabuses, call 215-763-6529 or visit www.wagnerfreeinstitute.org

Lectures

Thursday, March 4, 2010 - "Stories Behind the Species: Animals at Risk" - Presented by DR. SCOTT McROBERT, St. Joseph's University
4:00 - 7:00 PM Lecture at 5:30 PM

We are living in the midst of a mass extinction.

While the world is seeking solutions to a complicated series of environmental concerns, everything from global climate change to searches for new sources of energy, few people realize that animal and plant species are disappearing at an alarming rate. And while mass extinctions have occurred before, this is the first time in which the activities of one species, humans, are responsible for elevated rates of extinction of species across the entire planet.

In this talk, Dr. Scott McRobert will provide a general overview of the current causes of extinction, and tell stories about amazing animals, some still alive, some lost forever. If weather permits, Dr. McRobert will bring along some endangered species from his lab.

Dr. Scott McRobert has been fascinated by animals all of his life and says that his work as a scientist isn't much different from the things he did as a child. Dr. McRobert received his bachelor's de-

gree in biology from Juniata College, his master's degree and Ph.D. in behavioral genetics from Temple University, and studied pheromone biochemistry as a postdoctoral fellow at Montana State University and the University of Hawaii. He is currently a professor of biology at Saint Joseph's University where he studies animal behavior, ecology and evolution. As part of his work, Dr. McRobert oversees the Biodiversity Laboratory at St. Joe's, which house hundreds of rare, exotic and highly endangered animal species.

Saturday, March 27 at 1:00 PM - Westbrook Lecture 2010

Dr. Bonnie Bassler "I Am One of You: The Secret Language of Bacteria". Until recently, it was not believed that disease-causing bacteria could communicate with each other. Scientists have been aware of communication in a few marine species since the 1970s, however these were considered an anomaly. While studying bioluminescence, Princeton University microbiologist, Dr. Bonnie Bassler discovered that cell-to-cell bacterial communication, also known as quorum sensing, is actually ubiquitous in the bacterial world.

It is her goal to understand quorum sensing and the molecular mechanisms bacteria use to communicate with one another in order to combat deadly bacterial diseases. Dr. Bassler's latest studies suggest that interfering with their communication could prevent bacteria from mounting a deadly assault on their host organism, a discovery that may provide an alternative to traditional antibiotics in fighting disease, especially ones that are prone to drug resistance.

Dr. Bassler is the Squibb Professor of Molecular Biology at Princeton University. The recipient of a MacArthur "genius" grant, she will discuss her groundbreaking research, revealing that bacteria are much more sophisticated than anyone ever realized. Talk begins at 1 PM. The museum will be open from 12-4 PM

Wednesday, March 31, Lecture at 5 PM - A History of North Broad Street - A lecture by Robert Morris Skaler, part of the series North of Center: A History of Broad Street presented by the North Philadelphia Arts and Culture Alliance

Noted historian and architect Robert M. Skaler will present a lecture and a series of images illustrating the development of North Broad Street in the 19th century. Residents of this area built their houses and churches grander than many in Center City preferring the clean "Uptown" air to that of the old Quaker City with its cramped quarters.

Hear the stories of the people who once called North Broad Street home as you view images of the grand buildings that lined Victorian-era North Broad Street - many of which are now lost.

Robert M. Skaler is a forensic architect and graduate of the University of Pennsylvania School of Architecture. He is a Past President of the Philadelphia Chapter of the Victorian Society, and adviser to several Historic Societies. He has written books detailing the pictorial histories of Philadelphia, including Philadelphia's Broad Street, South & North which he will be signing after the lecture.

Saturday, April 24, 2010 - Family Program - 3rd Annual Natural History Road Show. Presented by the Wagner Free Institute of Science

and a panel of experts specializing in plants, shells, insects, rocks and minerals

Presentation at 1:00 PM. Road Show from 2:00 to 4:00 PM
Bring your treasures!

Thursday, May 20, 2010

"Silent, Weird, Beautiful: Philadelphia's City Hall and It's Architect" Presented by DR. MICHAEL LEWIS, Williams College. 4:00 - 7:00 PM Lecture at 5:30 PM



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

Monday, March 8, 2010 at 6:00 p.m.

"The Impact of Meteors on the Origin and Early Evolution of Life"

Alexandra Krull Davatzes, Assistant Professor in the Department of Geology, Temple University

Meteorite impacts to the Earth were larger and more frequent early in its history, just when the first life forms on Earth were evolving. What effects did these impacts have? One idea is called impact frustration, where all of the first life forms were killed off in one or more massive extinctions, and life had to start anew. This means that the universal ancestor from which all life on Earth evolved may just be the last common ancestor. Another idea proposes that, rather than killing off life, meteors may have actu-

ally helped to seed the planet by panspermia, bringing biological material from another planet, or meteorite impacts may have provided the energy to create biological materials from a primordial soup. Dr. Davatzes will discuss these and other aspects of the critical role of meteorite impacts in defining the early Earth's environment and habitability.

Presented by the American Philosophical Society (APS) Museum.

Monday, April 12, 2010 at 6:00 p.m.

"What's in your Air? Low-tech Tools for Finding Out"

Gwen Ottinger, Research Fellow, Environmental History and Policy, Chemical Heritage Foundation

Chemicals released from motor vehicles, power plants, and industrial facilities can have a negative effect on the quality of the air in residential communities. Just how big is the effect? Finding out is a challenge--but several Delaware Valley communities are tackling it with the help of innovative, low-tech monitors. Ottinger will talk about the monitors and their potential for evaluating and improving air quality in local communities.

Gwen Ottinger holds a Ph.D. in Energy and Resources from the University of California, Berkeley. Since 2001, she has conducted research on the use of science in environmental justice activism, with particular interest in how community groups use air monitoring technology in grassroots campaigns. Presented by the Chemical Heritage Foundation.

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



The College of Physicians of Philadelphia

BIRTHPLACE OF AMERICAN MEDICINESM

The 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.

Friday, March 19, 2010 4:00 - 5:30PM

Philadelphia Area Colloquium in the History of Science, Technology and Medicine: From Fish to Man: MACOS and Animal Objectivity

Discussion of a paper by Erika Lorraine Milam, PhD, Assistant Professor, Department of History, University of Maryland, College Park.

Following the successful Soviet launch of the Sputnik satellite in 1957, it seemed clear to U.S. legislators that Americans had fallen behind in the race for space. One way to ensure a democratic tomorrow for the next generation was to improve the quality of science education in public school classrooms. Beginning with the physical and mathematical sciences, curriculum reform efforts quickly extended to the biological and social sciences. By the early 1960s, a group of anthropologists and educators were collaborating on a new pedagogical program called Man: A Course of Study, or MACOS. The authors of MACOS looked for a way to transport elementary school students virtually to the far reaches of the world so that they could discover what it was to be human through the careful study of a different human culture. MACOS, however, turned into a political battleground over the appropriate use of other cultures as a pedagogical model for teaching American children.

Some people objected to claims that all cultural solutions to biological problems were morally equivalent. Biology came to vie with anthropology in the classroom, and for a time, the use of primates as models of human society was far less controversial than examining other cultures.

Sponsored by the F.C. Wood Institute for the History of Medicine and the Philadelphia Area Center for the History of Science.

NOTE: This colloquium involves discussion of an academic paper that will be posted at www.pachs.net in early March. Please register online, here, or contact info@pachs.net for further information.

Friday, April 2, 2010 5:30 - 7PM

Exhibit Grand Opening for Corporeal Manifestations

Corporeal Manifestations is a unique collaboration between the Mütter Museum and curator Sasha K. Reibstein, Assistant Professor of Art, Director of Ceramics Palomar College, which highlights artists who create traditional ceramic figurative work by exploring the psychology of our biological existence. The multidisciplinary exhibition interprets the documentation and display of medical specimens and their conditions in three-dimensional objects from clay, one of the most natural materials available to artists. Medical research and ceramic arts reflect on how we understand our physical selves and construct how perceptions of the human body. The work exhibited ranges from the strong realism of Tip Toland's and Christina West's life-size figures to Jason Briggs and Jessica Kruegger's abstract forms which resemble body parts and organs, focusing on the sensual and visceral. Artists Roxanne Jackson's and Kate MacDowell's sculptures depict realistic anatomical parts that blend with elements from nature, exploring our relationship and dominance over the natural world.

Sponsored by the Mütter Museum of The College of Physicians of Philadelphia.

NOTE: Registration is not required for this event.

APS Museum Calendar: January –May 2010

Second Sundays at the APS Museum 1-4pm

APS Museum, Philosophical Hall, 104 S. 5th St.
Family-friendly afternoons (ages 5+) at the APS Museum, featuring activities and/or demonstrations inspired by the Dialogues with Darwin exhibition.

Sunday, March 14, 2010: Create plant imprints

Sunday, April 11, 2010: Book arts with artist Rosae Reeder

Sunday, May 9, 2010: Make your own magic lantern

The Tract House: A Darwin Addition

January 29-April 11, 2010 Hours: Friday-Sunday, 11 a.m.- 5 p.m.
First Fridays until 8 p.m.
231 N. Third St.

The Tract House: A Darwin Addition presents an evolutionary twist on classic religious tracts. Artist Lisa Anne Auerbach and a graphic designer have created printed ephemera based on writing that was both commissioned from artists and solicited from the public. The completed tracts are displayed at 231 N. Third St. where visitors can peruse the many versions and take what they wish, free of charge. Auerbach hopes that the tracts will “educate, activate, infuriate, explicate, obfuscate, and titillate.” The project focuses on the democratic aspect of the printed image – the implied necessity for dissemination of the multiple.

Friday, March 5, 2010 at 6:30pm

Lisa Anne Auerbach, “Pass It On”

Artist’s lecture

(Preceded by Thomas “2mas” Struck rapping on Darwin)

APS Museum, 104 S. Fifth Street

Tantalizing agitprop in the form of religious tracts and sweaters? Paeans to the survival of small, DIY businesses? LA artist Lisa Anne Auerbach will stir you to action with her witty, colorful, and unlikely art works. Auerbach will discuss (among other projects) her current collaboration with the APS Museum and Philagrafika on The Tract House: A Darwin Addition, which presents an evolutionary twist on classic religious tracts to get the word out about Darwin and his ideas.

Please rsvp to rsvp@apsmuseum.org

Tuesday, March 23 at 6:30pm

Karen Snetselaar, Professor and Chair of Biology, Saint Joseph’s University “Charles Darwin the Experimental Botanist”

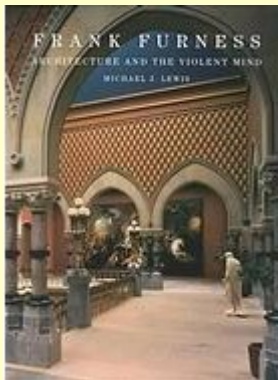
Franklin Hall, 427 Chestnut St.

Lecture in collaboration with the Pennsylvania Horticultural Society. The lecture is followed by a wine reception and curatorial tour with Sue Ann Prince.

\$20 admission, \$10 admission for Friends of APS and PHS members.

To register and purchase tickets, please contact Carol Dutil at 215-988-8869 or cdutil@pennhort.org

Friday, March 26, 2010 at 5:30 PM



The Architectural Ethics of Frank Furness

at Benjamin Franklin Hall, 427 Chestnut Street

Michael J. Lewis is Faison-Pierson-Stoddard Professor of Art at Williams College. He writes widely on art and culture, and his essays have appeared in the New York Times, the Wall Street Journal, and the Atlantic Monthly, and his books include Frank Furness: Architecture and the Violent Mind and American

Art and Architecture. In 2008 he received a Guggenheim Fellowship for his study of Utopian societies. The Philadelphia architect Frank Furness designed some of the most imaginative and idiosyncratic buildings of the Victorian era, including the Pennsylvania Academy of the Fine Arts and the Fisher Fine Arts Library of the University of Pennsylvania. Since his rediscovery in the 1960s, after generations of ridicule and neglect, he is now regarded as one of Philadelphia’s great cultural figures. This lecture will show how his architecture rested on a rich and complex ethical basis, which was shaped by the transcendentalist philosophy of Ralph Waldo Emerson, and which Furness passed on to his pupil Louis Sullivan.

Reception: 5:30 p.m., Program: 6:00 p.m.

RSVP: sduffy@amphilsoc.org or call Reception Desk (215) 440-3400

For more information about these and other upcoming APS events, visit www.apsmuseum.org

Friday, April 16, 2010 at 5:30 PM

Here, George Washington Was Born: Memory, Material Culture, and the Public History of a National Monument

Benjamin Franklin Hall, 427 Chestnut Street

Seth C. Bruggeman is assistant professor of history and American Studies at Temple University where he also coordinates the public history program. He holds a Ph.D. in American Studies from the College of William and Mary. His teaching and research specialties concern memory, commemoration, and material culture. Remembering George Washington at the Sites of his Birth - The National Park Service’s George Washington Birthplace National Monument has commemorated Washington and his life for nearly eighty years. For much of that time, however, nagging questions about the monument’s authenticity have pitted the many heirs to Washington’s legacy against one another. Seth Bruggeman reveals how these questions have often masked even broader debates about the meanings of race and gender in American memory. He will explore these contests of memory for what they reveal about the history of commemoration in this country and the challenges of doing public history.

Reception: 5:30 p.m., Program: 6:00 p.m.

RSVP: sduffy@amphilsoc.org or call Reception Desk (215) 440-3400



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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, March 25, 2010

2nd Annual Mid-Atlantic Cleantech Investment Forum

Blank Rome's Energy Industry Group and The Academy of Natural Sciences Center for Environmental Policy, are pleased to sponsor the 2nd Annual Mid-Atlantic Cleantech Investment Forum. The program will be moderated by Blank Rome partners, Thomas Dwyer and Lou Rappaport, and will feature a panel of experts and thought leaders discussing cleantech venture and corporate investing as well as a showcase of leading Mid-Atlantic cleantech companies.

With additional support from: Cleantech Alliance Mid-Atlantic
For more information, contact: Lorrie Scott

Scott-la@BlankRome.com

Upcoming Programs:

Spring Socially Responsible Investment Series: Details TBA
(March, April, May)

- ♣ **Thursday, March 18, 2010**, Urban Sustainability Forum Building Codes (Speakers: TBA)
- ♣ **Monday, May 10, 2010**: Annual Cheryl Beth Silverman Memorial Lecture, featuring Dr. Sylvia Earle, Oceanographer. This program is co-sponsored by The Academy of Natural Sciences and The Explorer's Club with the generous support of The Silverman Family.

Tuesday, April 13, 2010, 6:00 pm to 8:30 pm

“Why Saving Species Matters: How protecting species and ecosystems around the world affects our health, our pocketbooks and the kind of world we leave for our children”

Join us for a discussion about the rapid loss of species and ecosystems like rainforests and coral reefs around the world. Learn what we can do to help halt species loss and work toward conservation of natural resources. Find out about life-saving medicines derived from natural compounds that are used to treat cancer and other diseases. Learn about ongoing efforts to protect our most threatened ecosystems and promote sustainable development, and how the United States can be a leader in international conservation.

Panelists will include:

Dr. Thomas Eugene Lovejoy III: chief biodiversity adviser to the president of the World Bank, senior adviser to the president of the United Nations Foundation, and Biodiversity Chair of the Heinz Center for Science, Economics, and the Environment

Samuel C. Blackman, MD, PhD: pediatric oncologist and Associate Director of Experimental Medicine/Oncology at Merck Research Laboratories

Jeff Wise: Director of the Alliance for Global Conservation, Director of the Pew Environment Group's Global Conservation Initiative

Dr. David Velinsky (moderator): Vice President of the Academy of Natural Sciences and Director of the Patrick Center for Environmental Research

There will be an opportunity for audience members to pose questions throughout the program. For more information on this issue, visit: www.actforconservation.org.

Reception: 6:00 – 6:30 pm Forum: 6:30-8:30 pm

Register: biodiversityspeciesmatter.eventbrite.com/

This program was made possible by The Pew Charitable Trusts and the Academy of Natural Sciences Center for Environmental Policy through the generous donations of the William Penn Foundation and the Environmental Associates of the Academy.

Unless otherwise noted, all Town Square programs are held in the Auditorium, Academy of Natural Sciences, 1900 Benjamin Franklin Pkwy, Philadelphia PA. All Town Square Events are free and open to the public. For more information, contact cep@ansp.org.



Penn
UNIVERSITY OF PENNSYLVANIA

2009-10 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.

6 P.M. @ the MarBar, 40th and Walnut street location, 2nd floor of the Marathon Grill, menu items available for purchase
RSVP to Jordan Reese, jreese@upenn.edu or 215-573-6604.
RSVP's are encouraged, but we aren't sticklers.

- **Jan 20, 2010**, Ruth Schwartz Cowan, History and Sociology of Science: **DNA Banks and Genetic Tests, Should I make a deposit? Should I take one?**
- **Feb 16**, Max Mintz, Department of Computer Science **Quantum Computing**
- **March 17**, Jonathan Moreno, History and Sociology of Science: **Bioethics in Washington**
- **April 14**, Josh Plotkin, Department of Biology **: A Viral Evolution**
- **May 12**, Robert Kurzban, Department of Psychology: **The Cognitive Process Behind Hypocrisy**

**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 are free and open to the public unless otherwise noted.

Tuesday, March 9, 2010 at 12:00 PM to 1:00 PM

Brown Bag Lecture: Alberto Cambrosio, "Protocols, Networks and Conventions: New Forms of Objectivity and New Biomedical Practices in the (Post)Genomic Era"

The evolution of Western medicine since World War II may be described as a realignment of biology and medicine that has in turn been accompanied by the emergence of a new type of objectivity—regulatory objectivity—based on the systematic recourse to the collective production of evidence. Collaborative forms of work, such as extended networks, expert groups, and consortia, increasingly frame the structure of biomedical activities. This collective turn is especially visible in two domains: genomics—where the production of knowledge relies not only on very large-scale collaborative projects, such as the Human Genome Project, but also on a motley collection of cooperative groups specializing in a given pathology or specific genes—and, more traditionally, clinical trials, in particular in the field of oncology, where new protocols and therapies emerge from large-scale, multicenter clinical trials performed by long-established cooperative groups, such as the Eastern Cooperative Oncology Group in the United States and the European Organisation for Research and Treatment in Cancer. In this talk Cambrosio will focus on a new kind of large collaborative clinical trial that emerges at the intersection of these two domains. These kinds of clinical trials raise issues about the redefinition of national and international collaborative links between clinicians and researchers from different disciplines and between public research organizations and biotechnology start-ups.

Alberto Cambrosio has been a professor at McGill University's Department of Social Studies of Medicine since 1990. His area of expertise lies at the crossroads of medical sociology and the sociology of science and technology. His work focuses on biomedical innovation (in particular, on the application of molecular biology and genomics to the diagnosis and the therapy of cancer) and on the social and historical dynamics of biomedical regulation, objectification, and standardization. His publications include *Exquisite Specificity: The Monoclonal Antibody Revolution* (Oxford University Press, 1995) and *Biomedical Platforms: Realigning the Normal and the Pathological in Late-Twentieth-Century Medicine* (MIT Press, 2003), both coauthored with Peter Keating. He was one of the guest editors of a recent special issue of *Social Studies of Science on Biomedical Conventions and Regulatory Objectivity* (October 2009). He has recently submitted a book manuscript (also in collaboration with Peter Keating) titled *Cancer on Trial: The Rise of Oncology as a New Style of Practice*. Free and open to the public. RSVP Requested

Wednesday, March 10 - 6:30 pm - (free)

**Science fiction movie in cooperation with The Secret Cinema
The Invisible Ray (1936, Dir: Lambert Hillyer)**

"Every scientific fact accepted today once burned a fantastic fire in the mind of someone called mad." Thus begins this eerie and

largely unsung sci-fi/horror film from Universal's golden age, featuring the great stars of both *Frankenstein* and *Dracula*. Boris Karloff stars as Dr. Janos Rukh, a brilliant scientist who declares himself "200 years ahead" of his rival Dr. Benet (Bela Lugosi), then proves it by discovering a super-powerful element in an ancient meteor. He soon becomes contaminated by the "Radium X," which causes him to go mad...and when Dr. Rukh discovers that his own glowing touch can instantly kill, that's when the trouble really starts.

Followed by a discussion led by David Grazian, Associate Professor of Sociology, University of Pennsylvania.

Thursday, March 11, 2010 - 10:00 a.m. to 2:00 p.m.

Joseph Priestley Society Symposium and Meeting: Eastern Technology Council's Life Sciences Enterprise Award Winners
Open to the public. Free for Robert Boyle Society members (please register by phone). Registration required

Tuesday, March 16, 2010 - 12:00 p.m. to 1:00 p.m.

Brown Bag Lecture: Joris Mercelis, "Leo H. Baekeland and the Translation of Technology"

Joris Mercelis's dissertation investigates the commercialization of the first synthetic plastic, Bakelite, in Europe and in the United States. Mercelis assesses the different business environments and entrepreneurial strategies pursued by the Belgian-born American scientist-entrepreneur Leo H. Baekeland (1863-1944), who began marketing Bakelite in 1907.

Joris Mercelis is working toward a Ph.D. in history at Ghent University (Belgium).

Wednesday, April 14 - 6:30 pm (free)

**Science fiction movie in cooperation with The Secret Cinema
X: The Unknown (1956, Dir: Leslie Norman)**

"You're a scientist...you should be locked up!" Visiting American researcher Dean Jagger faces wrath from worried parents and mistrust from the military as he investigates a mysterious force that is causing death and mayhem in the Scottish moors, in this top-notch serious science-fiction thriller from Britain's legendary Hammer Films. Despite this lack of faith in his theories (and his brusque manner), Jagger successfully reasons out the cause of the strange goings-on: a giant mass of intelligent, radioactive mud has emerged from the center of the Earth, starved for energy and multiplying in size! This intelligent UK predecessor to *The Blob* features crisp black and white photography (largely shot at night), and excellent acting from a cast that includes Leo McKern (the ring-seeking villain from *Help!*) and singer Anthony Newley.

Followed by a discussion led by Michael Wellenreiter, film director and Assistant Professor, the University of the Arts.

Ongoing exhibitions

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

Transmutations: Alchemy in Art (exhibit) :

Monday-Friday, 10:00 a.m. to 4:00 p.m., by appointment only
Call 215-925-2222 to make an appointment.

The Whole of Nature and the Mirror of Art: Images of Alchemy (exhibit)

Du Pont Gallery

Marvels and Ciphers: A Look Inside The Flask

1 March - 10 December 2010

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.

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

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PhACT's High School Science Fair Student Prize Funds

Total contributed for 2010 prizes = \$318.00
2010 Goal = \$300.00

Excess funds applied to 2011 prizes = \$18.00
4 contributions in February = \$85.00
Total 2011 Prize Fund collected = \$103.00
2011 Goal = ????

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

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

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