



NMSR Reports

The Newsletter of the
New Mexicans for Science and Reason

NMSR Reports, David E. Thomas, Editor, P.O. Box 1017, Peralta, NM 87042 © 2014

DECEMBER MEETING:

NEW MEXICANS FOR SCIENCE
AND REASON WILL HEAR

Steven B. Bradfute, PhD on
Update on the Ebola Crisis

WEDS., DEC. 10th, 7 PM

==>MUSEUM OF NATURAL
HISTORY AND SCIENCE<==

==>1801 Mountain Road NW<==

In the Multi-Purpose Room
Bring a friend

He collaborates with the Los Alamos National Laboratory and NIH.

The ongoing outbreak in West Africa, which has killed more than 5,400 people, confirms the need for an Ebola vaccine. Dr. Bradfute has been working on just such a vaccine for years.

More Info:

<http://hscnews.unm.edu/news/unm-ebola-expert082214>

7 PM December 10th at the NM Museum of Natural History and Science. Info, John Covan, 268-1878.

January 14th, 2015 NMSR
Meeting: NMT Prof. Becky
Reiss on “Beyond Genetics:
Epigenetics, Eugenics and
More!” Don't miss our first
meeting of 2015!

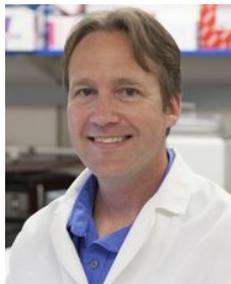


FUTURE MEETINGS ANNOUNCED

DECEMBER 10th Meeting

– Ebola Update

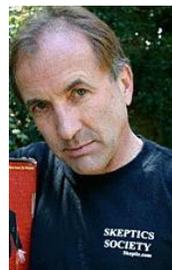
Steven B. Bradfute, PhD will talk about the ramifications of the latest Ebola episode at our December 10th meeting. Dr. Bradfute is Research Assistant Professor at the Univ. of NM Global Health Center in the Dept of Internal Medicine. He received his PhD from Baylor College of Medicine followed



by a postdoctoral fellowship at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID). His work at the Global Health Center includes developing and testing vaccines against hemorrhagic fever viruses.



Coming on Feb. 21st – Michael Shermer!



NMSR and CESE are teaming up to bring Michael Shermer, director of the Skeptics Society and prolific author, back to New Mexico. Shermer will speak at the Unitarian Church on Carlisle at Comanche, at 1:30 PM on Saturday, February 21st. FREE AND OPEN TO THE PUBLIC. Stay tuned for more details!

March 11th, 2015 NMSR Meeting:

Victor Polyak, UNM will speak on “Effects of Climate Change on Prehistoric New Mexican Cultures” at our March meeting.



April 8th, 2015 NMSR Meeting:

Jason Wheeler of Sandia will speak on “A Better Prosthesis” at our April meeting.

New Mexicans for Science & Reason (NMSR)

NMSR is a non-profit group with the goals of promoting science, the scientific method, rational thinking, and critical examination of dubious or extraordinary claims. NMSR meets at 7 PM on the second Wednesday of each month, in Albuquerque, New Mexico, at the New Mexico Museum of Natural History and Science. NMSR Reports is its official newsletter.

NMSR officers:

Dave Thomas, President

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Marilyn Savitt-Kring, Science Mom

Harry Murphy, Physicist, Medical Quackery

Membership: \$20/year, includes newsletter, make your

check payable to NMSR, send to treasurer (Shelton).

Newsletter available in hard-copy and downloadable PDF.

NMSR Advisors:

- **Mark Boslough,**

Physicist (Impacts, Climate Change,
Global Warming). Sandia National Labs.

- **Robert Cormack**

Professor of Psychology, NMIMT

- **Kendrick Frazier**

Editor, Skeptical Inquirer

- **John Geissman**

Professor of Paleomagnetism, UNM

- **Alan Hale**

Southwest Institute for Space Research

- **Randy Thornhill**

Professor of Biology, UNM

Cyber-Cypher Clue: W=M, V=J

Bonus Puzzle Clue: Find your inner bachelor! Oh yeah, combinatorics will help too. Hint: $T = C + B + A$

WANTED: READER ARTICLES & COMMENTARY

Got something you want to share with NMSR members? Send it in! ATTN: Dave Thomas, Editor, NMSR Reports.

REMEMBER, our next regular NMSR meeting is at 7 PM on **WEDNESDAY, DECEMBER 10th, 2014**, at the **NM MUSEUM OF NATURAL HISTORY AND SCIENCE!**

PUZZLE TIME!

[Please send solutions to Dave Thomas at:

nmsrdave@swcp.com, or at P.O. Box 1017, Peralta NM 87042.]

Cyber-Cypher: DECEMBER PUZZLE

(Submitted by Dave Thomas)

The following letters are a simple substitution cypher. If R stands for L, R will stand for L everywhere. Your Cyber-Cypher Clue: Clue? Oh, well - if you must, see p. 2.

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" P X F           I L M           H I
Y H M B K O Q D Y R   P X F H Q O F B   -
F E F Q R           I D Y P           P X D P
B L K K H Q P B     P X F           P X F H Q R
O B           U H B K F C ,           Z X O C F
F E F Q R           I D Y P           P X D P
Y H M P Q D N O Y P B           O P           O B
K Q H H I           H I           V L B P           X H Z
N F F K           O P           Q L M B . "   -   N D M
B H C H W H M

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SUPER SECRET WORD!

However you prefer to do the cypher itself (above or below), simply duplicate those actions on the alphabetized row of cypher letters below. You'll build an answer key, and you'll also reveal - the Super Secret Word!

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOVEMBER CYPHER SOLUTION

"WHEN WE READ ABOUT CREATION IN GENESIS, WE RUN THE RISK OF IMAGINING GOD WAS A MAGICIAN, WITH A MAGIC WAND ABLE TO DO EVERYTHING. BUT THAT IS NOT SO." -- POPE FRANCIS

Esteemed November Code Crackers: Mike Arms*, Alice Anderson*, Terry Lauritsen*, Ross Goeres*. *Secret Word: "CHILD OF NATURE"



December Bonus:

“I Just Need a Pair of Socks!”

Submitted by Dave Thomas

A frugal bachelor has exactly seven pairs of socks; four pairs are black, and three are white.

The December Bonus: If all 14 socks are lying around in random positions inside the bachelor's dryer, and he grabs the first two socks he can find in the dark, what is the probability he'll have (A) A black pair? (B) A white pair? (C) No pair at all?

November Bonus: “The Frugal Stalker”

Submitted by Dave Thomas

A certain stalker was tailing the target of his desires at the mall. As his prey entered several stores in the mall, the stalker would also enter the same store, but would always buy something to allay suspicion.

At the first store his victim entered, the stalker spent a third of the money he had on his person. At the second store, he spent a third of the remaining amount. And at the third store, he again spent a third of the remaining amount.

The November Bonus: If the stalker spent \$38 all together, how much did he start with?

Solution: \$54.00. He spent \$18 at the first store, \$12 at the second, and \$8 at the third, for a total of \$38.

Congrats to our November Solvers: Keith Gilbert (NM), Eiichi Fukushima (NM), Paul Braterman (UK), Rocky S. Stone (NM), Beulah Woodfin (NM), Harold H. Gaines (KS), Mike Arms (NM), Eric Hanczyc (WA), Alice Anderson (NM), Terry Lauritsen (NM), Ross Goeres (NM).

NOVEMBER 12th Meeting

– Heat Death of the Universe

Mike Donohoe of Albuquerque spoke on “Could a 'Heat Death' Be Necessary for Life?” at our November 12th meeting.

Here follows his brief description of his thesis. A longer version is available online at <http://www.nmsr.org/LAWANDDISORDER.pdf>.

I sent a copy of my collection of poems and essays,



Could a “Heat Death” be Necessary for Life? to Dave Thomas, written under my pen name of Kane S. Latranz. I was honored when he invited me to speak at the November meeting of **New Mexicans for Science and Reason** about how the theoretical heat death lends to the existence of Earth and life, and how the second law of thermodynamics, commonly abbreviated as entropy, supports our existence.

I'm not attached to the heat death concept, also called the big freeze, but it is currently the most accepted theory for a final state for the universe. Much of the point of the title essay is that I've never found any mention that Earth and life appear to be aspects of a very early stage of the heat death in progress, although this seemingly counter-intuitive notion becomes fairly obvious.

In thermodynamics, concentrated heat energy, such as the chemical heat potential in a full gas tank, is “order.” Expended gasoline dissipated in fumes from the exhaust as the fuel supply diminishes is entropy; thermodynamic “disorder.”

The empty space of the cosmos is extremely cold, contrasted by intense heat from stars, those stars liken-able to a fuel supply for the universe. It is expected that no new stars will form some 100 trillion years from now. When the last stars are expended, the universe will be like an empty gas tank, the stars having dissipated their heat energy in the cold void of space. The temperature will be in a state of comparative equilibrium, no longer characterized by extremes of hot stars and cold space. At the same time as this is equilibrium, it is a condition of maximum entropy and thermodynamic disorder. A cold universe without stars cannot support life, such as the sun supporting life on Earth.

In my talk, I mentioned how Stephen Hawking's, *The Theory of Everything* includes his example of mixing 2 types of molecules as entropy, and disorder. This made me think of hydrogen and oxygen.

Hydrogen and oxygen cannot bond without mixing. By that definition, if the disorder of entropy is not understood in a very specific thermodynamic context, the existence of H₂O, which could not come about without mixing, would qualify as disorder. Never mind that we could not exist without water!

Another concept I learned from that book is the arrow of time. A water glass falls off a table and shatters on the floor. The fact that it will not reform up on the table demonstrates that time moves only forward, not in reverse.

By applying time's arrow, that represents the one-way street of time in terms of irreversible processes, in many different ways, I realized that entropy facilitates evolution and life at every turn.

Eventually I found many of my realizations, shy of the heat death itself, corroborated by the work of retired chemistry professor, Frank Lambert, who has recently had entropy redefined in over 30 text books, no longer by the confusing term of disorder, but as energy dispersal. $e=mc^2$. All matter, being energy, includes some measure of heat, so entropy as

heat loss applies to the finite nature of all forms. Harvesting plants and animals is an irreversible process without which we could not exist. You cannot un-slaughter a cow or un-harvest wheat. Time's arrow, and entropy. I gave many examples, from the death and replacement of cells in our bodies that extends our lifespans to the creation of fertile soil from decay. You cannot un-burn gasoline. Cars, among all forms of transportation, as well as energy-driven industry, technology, and manufacturing, would not function without directed entropy.

The late Dr. Carl Sagan famously said "We are star stuff." What many do not seem to realize is that star "stuff" comes from stars that have aged, processing their hydrogen fuel into things like carbon, which is an irreversible process, and stars that have died in a supernova to make that life stuff available. (Think of a water glass shattering on the floor.) The death of stars is a progression toward the heat death in which there are no more stars burning at all, but the aging and death of stars is also necessary for our existence as "star stuff." Therefore, a universe that ends in a heat death, itself, makes life possible. We, as a product of dead stars, are an aspect of an extremely early stage of that theoretical heat death in progress. (NMSR thanks Mike Donohoe for a fascinating presentation.)



Relativity for Poets – Dec. 8th

On December 8th, Dave Thomas will present "Relativity for Poets" at Albuquerque Oasis. This talk is an explanation of Albert Einstein's special theory of relativity. Animated movies will show how space travel would appear if Einstein was right, and if he was wrong. Dangers of high-speed space travel will be included. 1:00 – 2:30; fee \$8.00
 Info: <http://www.oasisnet.org/AlbuquerqueNM/Classes.aspx>

Skeptiverse Haiku 2014 Your transcendental path to Comic consciousness! <i>by Keith Thomas</i>	What are the current Cryptobioethics for Bagging a Bigfoot?
Is there a psychic Healing hotline to help the Ebola hot zone?	I sense some seers Will be backdating forecasts Of present events.
How much might you weigh On a <i>Zero Gravity</i> <i>Massage Recliner</i> ?	<i>Cosmos</i> make-up room: Cosmologist encounters Cosmetologist.

More Skeptiverse Haiku Next Month!

DUES - check the date on your mailing label. If it's time for you to renew, or to make a contribution, please send a check to
 NANCY SHELTON, NMSR Treasurer,
 11617 Snowheights NE, Albuquerque, NM 87112
 Name _____
 Address _____
 Membership \$20 per annum*
On the Net? Ask for the Paperless NMSR Reports! Send an email to nmsrdave@swcp.com "Dave Thomas"
**For Renewals that are above the \$20 annual amount, the excess will be applied to the NMSR budget. Thanks!*

The NMSR e-mail list is fun! It's an e-mail list with news announcements of interest to NMSR members, discussions about news of the times, and more. To join, send a request to nmsrdave@swcp.com.

Thanks to: John Covan, Debbie Thomas, Keith Thomas, and all our Puzzlers!

NMSR Reports Vol. 20, No. 12 December 2014 David E. Thomas, Editor (505) 869-9250 P.O. Box 1017, Peralta, NM 87042-1017		
<div style="border: 2px solid black; padding: 5px; width: fit-content;"> DECEMBER MEETING EBOLA! Weds. Dec. 10th 7PM </div>	IN THIS ISSUE: Future Meetings Announced Puzzles November Meeting - Heat Death of the U New Skeptiverse Haiku!	