# JULY MEETING:
## NEW MEXICANS FOR SCIENCE AND REASON are
## On Vacation!
## ==>NO MEETING in July<==
### =>Attend at your discretion!<=

## FUTURE MEETINGS ANNOUNCED!

## August 12th, 2020 NMSR Meeting: Tom Solomon on "A Sustainable Economy Without Fracking"



Our August 12th, 2020 will feature Tom Solomon. Tom is a co-coordinator of 350.org New Mexico, and is a retired electrical engineer. During his 34 year career at Intel he led the team which built and ramped Fab 11X in Rio Rancho, the $2B expansion that doubled the size of their microprocessor Fab in 2001. He also led the efforts to build Intel's first (10kW) solar array in NM in 2008, and a larger 100kW rooftop installation in 2011. After retirement, Tom became a full-time activist. He was a field organizer for OFA in 2012 and now co-leads the NM chapter of 350.org, fighting global warming to ensure a safe climate for his 3 children. 350NM's campaigns include UNM divestment, large public climate rallies, public education forums on methane leakage, rooftop solar advocacy at neighborhood associations and coalition efforts at the PRC to replace the power from PNM's San Juan coal plant with Wind and Solar energy.

Tom will discuss the basics of our ongoing climate emergency, and the Resource Curse, and how it affects New Mexico. He'll show that fracking is unsustainable, and is clearly un-economical at its core. Tom will address electric vehicles, and how they destroy oil demand and pricing. His conclusion will include recommending a path by which New Mexico can have a just transition to a sustainable economy without oil or gas.

Because of the ongoing Corona virus crisis, this meeting will be held online, and members can attend from their homes or offices. It will be hosted on Zoom. A Zoom Link will be sent out to all members and potential attendees before the meeting. To get added to the attendee list, simply email nmsrdave@swcp.com.

If all goes well, members will be able to interact, "raise their hands", ask questions, and so forth. And, if you missed the meeting, you'll still be able to watch the video later. Tune in at **7:00 PM August 12th, 2020**, On Line!

## Early Fall 2020 NMSR Meeting:
**Keith Matzen of Sandia National Laboratories, on "High Energy Density Science with Pulsed Power -- From Fundamental Science to National Security Applications"**



Location and Date **TBD.**

### 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 CNM's Student Resource Center, room 204 (@ Richard Barr Boardroom). NMSR Reports is its official newsletter.

**NMSR officers:**

**Dave Thomas**, *President*
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**Marilyn Savitt-Kring**, *Science Mom*

Membership: $**25**/year (hardcopy newsletter), or $**15**/year (downloadable PDF), make your check **payable to NMSR**, send to treasurer (Debbie Thomas).

**NMSR Advisors:**

• *Mark Boslough,*
      Physicist (Impacts, Climate Change,
      Global Warming). Sandia National Labs.

• *Kendrick Frazier*
      Editor, Skeptical Inquirer

• *John Geissman*
      Professor of Paleomagnetism

• *Alan Hale*
      Southwest Institute for Space Research

• *Randy Thornhill*
      Professor of Biology, UNM

Cyber-Cypher Clue: U = F, W = C.

Bonus Puzzle Clue: Try setting $q = 1 - p$.

*WANTED: READER ARTICLES & COMMENTARY*

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

## *REMEMBER*, our next NMSR meeting is **ONLINE!**

**Zoom Meeting info will be emailed out, ask nmsrdave@swcp.com for a copy.**

# PUZZLE TIME!

## Cyber-Cypher: JULY 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.

```
" H V    E I B P X Y    T V    N O L J K A    N B

P K Y V O E N D K Y ,    H V X X ,    H I D N ' E

N I V    R O B T X V Q ?    H I L    Y B K ' N

L B P    X J F V    H V D O J K A    N I V Q ? "    -

Z B I K E                            I B R F J K E

V R J Y V Q J B X B A J E N            F D N V

A O D T B H E F J ,    B K    B R R B E J N J B K

N B    U D W V    Q D E F E .
```

### 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
```

### JUNE CYPHER SOLUTION

```
"THE SHEPHERD DRIVES THE WOLF FROM THE
SHEEP'S THROAT, FOR WHICH THE SHEEP THANKS
THE SHEPHERD AS HIS LIBERATOR, WHILE THE
WOLF DENOUNCES HIM FOR THE SAME ACT AS THE
DESTROYER OF LIBERTY." - ABRAHAM LINCOLN
```

Esteemed June Code Crackers: Mike Arms*, Austin Moede*, and Terry Lauritsen*!
*Secret Word: "FLU PANDEMIC THROBS"

## SOCORRO STUMPER

### Need more Secret Word Cryptograms?

New puzzles every week at
www.nmsr.org/SocorroStumper.htm

## July Bonus: "Multiple Protection"

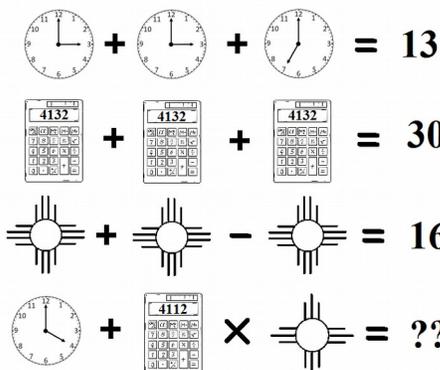***Submitted by Dave Thomas***

**The July Bonus**:

(A) If a bandana is 60% effective in preventing transmission of the coronavirus, and a paper face mask is 80% effective, how effective is the combination (mask and bandana together)?

(B) If a bandana provides 40% probability of allowing transmission of the coronavirus, and a paper face mask provides 20% probability, what is the probability of allowing transmission for the combination (mask and bandana together)?

(C) What is the mathematical relationship of the two answers (A) and (B)?

## June Bonus: "Picture-Perfect Puzzle"

***Submitted by Dave Thomas***

$$\text{clock} + \text{clock} + \text{clock} = 13$$
$$\text{calculator} + \text{calculator} + \text{calculator} = 30$$
$$\text{zia} + \text{zia} - \text{zia} = 16$$
$$\text{clock} + \text{calculator} \times \text{zia} = ??$$

**The June Bonus**:  What is the Answer ??

**Answer**: 100, = 4 + (8 x 12)

**Congrats**: Rocky S. Stone (NM), Mike Arms (NM), Gene Aronson (NM).

## July Skeptiverse Haiku!
## by Keith Thomas

| | |
|---|---|
| Conspiracy tales – Which narratives best sustain Our worst suspicions? | The feng shui masters Of Wuhan may/Deserve a Major cut in pay. |
| Some federal lands Have long held an assortment Of BLM signs. | Bleach and chloroquine? I surmise/Trump may try for An Ig Noble prize. |
| Are you confident That confidence intervals Are comprehended? | Shakespeare revision – Gentleman of Verona Spreading corona! |

## June 10th, 2020 NMSR Meeting: "Panel Discussion on COVID-19"

Our June 10th, 2020 NMSR meeting featured a panel discussion on COVID19. Our panelists included Coffee Brown, M.D., Austin Moede, M.D., and myself, Dave Thomas. Coffee started things off by asking why people are so quick to believe rumors and conspiracies. He said that, technically, COVID19 is the


Coffee Brown

disease, and coronavirus SARS V2 is the variant of the virus that's causing this disease. While they are often used interchangably, it's good to know the distinction. Coffee suggested we consider the difference between *case* fatality rate and fatality rate, and the differences between antibody testing and RNA testing, and the way people are turning a scientific/medical issue into a socio-political issue. Dr, Brown blogs about the virus at https://covidconversations.tumblr.com/, which has a wealth of referenced information, for those interested.

Coffee said the United States faltered in its early response, and did not have the number of tests needed. We are testing people who may or may not have symptoms, or know someone they think has it.  There is about a 5.6 mortality rate for those testing positive. But, he said, the number of confirmed cases is somewhere between $1/20^{th}$ and $1/80^{th}$ of the *total* number of cases. We don't know this total number, because we're not testing *populations*, but at-risk individuals instead. Coffee went on to say that RNA and antibody testing do not give the same results.

If you test positive for an antibody test, you have probably been exposed for awhile, and may have some immunity, but you may not even have the disease currently. On the other hand, the RNA test tells you if you have the virus at that moment, and this is critical information to know. While false positives are rare for the RNA test, there can be 30% false negatives. If you think you have been exposed, and test negative, you should get a second opinion (i.e. another test). If you were positive on the RNA test, he said, it's most likely correct, and you should act accordingly. (About the only way to get a false positive on the RNA test is if the lab environment was contaminated with the virus.)

Austin Moede thinks about being on the front lines. What do you do when someone comes into your clinic with a positive test result? He got interested in medical testing back in the 1980s, when the AIDS virus was becoming known. Someone asked Parade columnist Marilyn Vos Savant back in 1993 about a drug test (or, say,

an AIDS test), with the following parameters: "Suppose it is assumed that about 5 percent of the general population uses drugs. You employ a test that is 95% accurate, meaning that if the person is a user, the test will be a true positive about 95% of the time (called the test sensitivity), and that if the person is a non-user, this test will be a true negative about 95% of the time (called test specificity). The writer asked Marilyn what it meant if a random person tested positive for drugs; how likely is it they are indeed a user? Marilyn answered that it was 50/50; there's an equal chance the person uses drugs, or does not. Her answer was met by strong reactions and denials, but it was correct. This chart explains how it works: out of a population of 10,000, only 500 are users (5%). Of these, 475 test positive (95% test sensitivity), and 25 lucky addicts test negative (5% false negative). Also, of the non-using 95% of the population(9,500 people), 9,025 correctly test negative (95% test specificity), leaving 475 to test positive (5% false positive). Of the 475+475=950 people testing positive, have are users, half are not. So, a positive test really does result in a 50/50 chance that the person is actually a user (or, in a different version of the problem, has AIDS).

|  | Non User | User | Total |
|---|---|---|---|
| Negative | 9,025 | 25 | 9,050 |
| Positive | 475 | 475 | 950 |
| Total | 9,500 | 500 | 10,000 |

Dave Thomas showed a version of the same problem where the test accuracy was 99% (both specificity and sensitivity), and the result for using/disease given a positive test was still 50/50. If the condition is more prevalent in the population, however, a positive test becomes much more indicative of the condition being tested for.

Dave also discussed coronavirus conspiracy theories. Is it caused by 5G wireless transmissions? (No.) He also described the "Plandemic" video which went viral on the internet, and how it featured virologist Judy Mikovits, who is a well-known anti-vaccine proponent. The video claims that Covid19 is man-made, and that Dr. Fauci is a malevolent actor. It also claims that the hydroxychloroquine cure is being suppressed, and that the flu vaccine makes you susceptible to COVID19. "Plandemic" contends that the "Plan" is to prevent normal, effective therapies until everyone is infected, and *then* "push the vaccines." Dave also discussed the lackluster US response, and lessons to be learned from the 1918 Flu.

NMSR thanks Coffee Brown, Austin Moede and Dave Thomas for thought-provoking presentations. A **video of the entire meeting and discussion, are available on the NMSR meetings page**, http://www.nmsr.org/meetings.htm.