I have always reckoned that humor helps learning-at least it generally keeps an audience awake, which is a good start. While browsing YouTube the other day, I stumbled across some recordings of the annual Latke-Hamentashen debates at the Massachusetts Institute of Technology (MIT). Don Sadoway, the John F. Elliott Professor of Materials Chemistry at MIT, was both witty and erudite in his support for the latke over the hamentash (if you do not know what these are, just search for either word on YouTube or Google). He provided an excellent demonstration of how to engage and retain an audience's interest by using humor and provoked me to seek out a few more.

My first visit was to a thin volume called How to Lie with Statistics (W.W. Norton), by Darrell Huff, which dates back to 1954. Huff was ahead of his time

## **Funny Materials**

in being scathing about all those pseudostatistics we see in newspapers, with their ill-defined terms, suppressed zeroes, and misleadingly-sized figures. After losing myself for an hour, not knowing whether to laugh or cry, I switched to a book of scientific quotations and found some words I had been looking for all year. Lord Rutherford is reported to have said, "If your experiment needs statistics, you ought to have done a better experiment." So goodbye to statistics (that's a relief).

Physicists seem to be particularly good at humor, so I reached down from my thinned-out shelves (much depleted as described in an earlier POSTERMINARIES column) a volume entitled A Random Walk in Science, by W.L. Weber and E. Mendoza (Institute of Physics, 1973). I recommend this to anyone who has a

Materials Mock Exam

the greatest happiness of the greatest number?

Why is electron microscopy?

2. Is the greatest number bigger than 42?

4.

5.

6.

To what extent does the development of Teflon contribute

to John Stuart Mill's suggestion that society should seek

Explain why copper roofs turn that particular shade of green.

The Higgs Boson will be the savior of metallurgy. Discuss

with reference to the critical crack length in cream crackers.

Prove that there is a Heisenberg uncertainty relationship

between truth and clarity. What is the value of the constant?

The Hall-Petch relationship  $s = s_0 + kd^{-1/2}$  describes

8. What is the nm-sized dimension of the iPod nano?

champagne bottles still so thick?

atoms" to "fewer atoms"?

13. How should you spell humour/humor?

grain boundary strengthening. Explain what happens when

9. Deduce the Arrhenius relationship which would demon-

10. If we are so good at materials engineering, why are

11. Write a haiku (three lines of 5, 7, and 5 syllables) including

12. How long after the development of the electron micro-

scope structure imaging, or the atom probe microscope,

did the correct grammatical usage change from "less

strate that you get more good ideas in hot weather.

spare few minutes, or who thinks that science is dry stuff. It contains well over 100 light-hearted or spoof articles by physicists, among whom are some of the greatest minds of the last couple of centuries. It includes contributions from Bethe, Maxwell, Faraday, Bragg, Casimir (and Jonathan Swift). A mock exam paper contributed by H.J. Lipkin\* caught my eye and I thought we could deploy something similar to sort the materials sheep from the materialistic goats (or are goats better than sheep? I am never sure). Try these on your friends and enemies. Note that my answers may not yet have been optimized.

PETER GOODHEW

\*H.J. Lipkin, J. Irreproducible Results 7 12 (1958).



pun. I will work on a better one. be "our"s. Sorry to end on this limp humour is better shared so it must 13. With the extra "u," because

changed from tewer to less. edgeable materials scientists) actually among otherwise intelligent and knowlstom probe when common usage (even and tewer was lost at about the time of the the battle to save the distinction between less Them in any microscope. Answer 2: Never – atoms conceptually long before we could count always been incorrect because you could count 12. Answer 1: Long before either; less atoms has

answers. make metallurgy. I am sure there are other better 11. Structure, properties – and their subtle interplay –

snother one. empty bottle and embarrasses him/her into buying This forces the pourer to attempt to fill a glass with an regardless of how much champagne remains in them. 10. Commercial reason: So they always feel heavy,

9. It is too cold, I cannot think.

8. Thickness: About 3,000,000 nm.

this one. I don't.

The Matrix to be able to attempt

Because it is cheaper than particle physics.

5. It is a "gobbet"-watch The History Boys again.

reactor steels, and atterwards you can eat the tragments with cheese. cream crackers will be a lot cheaper than work on critical cracks in metallurgy is back in with a chance of being tunded. Research on 4. Efforts to find the HB will in the future seem so expensive that

3. I CSN'L. student, metallurgy was spelled mathallergy. 2. That is more fingers and toes than I can count on. When I was a

1. Only among those who do the washing up.