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FROM THE EDITOR

Even with poisonous hype, some science can survive



Scientists have to walk a thin line when communicating with the public. To convey their work's value and importance, they must present it in an engaging manner that emphasizes its most interesting aspects. In so doing, pertinent qualifications and caveats may be glossed over, leading the communicators' peers to

allege excessive hype or even to demonize the research itself.

As intermediaries conveying discoveries to the public, science journalists can get caught in this cross fire. In December, the bullets were flying furiously over a report about a microbe converted into an arsenic-loving, alien-like species proving that life on other worlds can be very different from Earth's.

Oh wait. That was the hype. NASA's clever PR machine leaked just enough information about the announcement for this new study to compete for media attention with celebrity divorces and athlete arrests. Bookies were even taking bets about the possibility that E.T. had finally phoned Earth. When the paper describing the finding was finally released by the journal *Science*, it turned out to be a simple case of an earthly species learning to substitute arsenic for phosphorus in its diet, as Rachel Ehrenberg describes in this issue (Page 5).

Of course, that really is a big deal. Life's six essential elements (carbon, hydrogen, oxygen, nitrogen, sulfur and phosphorus) aren't supposed to be negotiable. And arsenic is poisonous. So showing that a microbe could grow by eating it, apparently even incorporating it into its DNA, ranks as one of the top stories of the 21st century, so far. If it's right.

Many scientists doubt that this finding is correct, though. Maybe the researchers made mistakes, or perhaps there are other explanations for the results of their experiments. But you could say the same about almost any surprising scientific study that gets published. And the researchers did perform an array of experiments, investigating these microbes using various technologies producing quantitative data pointing in the arsenic-eating direction.

It's surely true that more work needs to be done to verify this finding. That's the way it is in science. But the ultimate outcome will not depend on how much hype surrounded the initial report. Biochemistry does not care whether NASA hypes new reports or not — had this paper been released without even a whisper, it would still have contained precisely the same evidence, with the merits of the analyses neither enhanced nor diminished. — *Tom Siegfried, Editor in Chief*

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