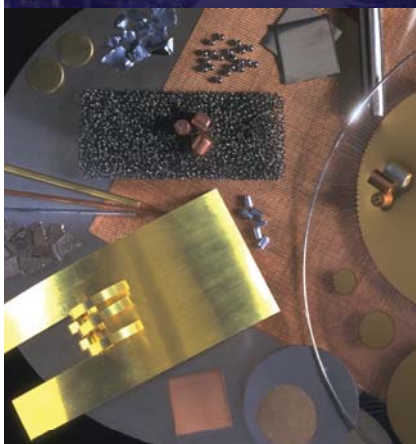


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Lindemuth from Los Alamos and their Russian counterparts to work hand in hand to generate first-rate science, develop respect and trust, and contribute to a safer world.

Ken LaGattuta laments the change in contracting of the US nuclear weapons physics design labs to for-profit entities. I fully concur. However, I take strong exception to his insinuation that my work on the North Korean nuclear problem is meant to create fear of North Korean nuclear aggression and generate political pressure for more US weapons R&D. That's nonsense. My aim is to provide as accurate a picture as possible of North Korea's nuclear capabilities to assist a diplomatic resolution. His critique of my having signed a letter expressing concerns about some specific language in the Obama administration's Nuclear Posture Review is similarly off the mark.

Great detective work by Denes Marton. Thanks for pointing out the unmistakable style of French caricaturist Jean Effel in the stockpile stewardship depiction presented by Rady Ilkaev. One of the Russian institute's artists clearly borrowed from Effel's characters to bring them into the world of nuclear weapons.

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Premature Nobel Prize decision?

The awarding of the 2011 Nobel Prize in Physics "for the discovery of the accelerating expansion of the universe" (see *PHYSICS TODAY*, December 2011, page 14) ventures into model-dependent speculation based on the observations of highly redshifted supernovae. The interpretation of the *just* 13-year-old discovery that the light from distant type Ia supernovae appears to be fainter than expected remains a matter of current astrophysics research.

In mainstream cosmology, type Ia supernovae are treated as calibratable standard candles, and since the more distant ones are apparently increasingly fainter than expected, the usual conclusion is that the universe is expanding at an accelerating rate. But the methodologies that allow the proper calibration of peak luminosities of the type Ia's—and thus their use in cosmological studies—are empirically based and may introduce systematic errors that give the false impression of an accelerating universe.

The intrinsic peak luminosities of type Ia supernovae depend on the nickel-56 yield of the explosions and vary by a factor of approximately three, whereas the supernova searches have found that distant type Ia's are only about 25% less luminous than expected after empirical corrections are made. But in 2011, new corrections based on masses of the host galaxies introduced new luminosity recalibrations¹ on the order of 10%. The field is clearly still evolving; other systematic corrections may need to be made in the future.

Various alternatives to an accelerating universe have also been proposed.² Whether such alternatives are viable remains to be seen, but the Nobel Committee for Physics has perhaps acted somewhat prematurely by selecting a preferred interpretation of the supernova projects' data. The effect, intentional or not, is to bully the skeptics into silence, self-censorship, or ridicule, whereas good science proceeds with a healthy dose of skepticism and with open minds.

It may turn out that the universe is indeed expanding at an accelerating rate; however, the scientific issue of the fate of the universe is too important to be settled by Nobel committee fiat. The case is not yet closed, the 2011 Nobel Prize notwithstanding.

References

1. P. L. Kelly et al., *Astrophys. J.* **715**, 743 (2010).
2. See, for example, C. Tsagas, *Phys. Rev. D* **84**, 063503 (2011).

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The "Doctor" title: Respect or confusion?

Although Robert Cassola's letter about the media not giving scientists and PhDs proper credit by using the appropriate title (*PHYSICS TODAY*, September 2011, page 8) is very interesting, I do not want to be called Dr. Kovalev unless I am acting as such.

Being a police officer or a physician gives a person both rights and obligations while off duty: You may be needed in an emergency. You have to be Officer Jones to handcuff somebody, and you have to be Dr. Jones to treat a patient. You also should uphold a certain level of personal integrity. So the media simply reflect the public perception of a special status those professions

have. If some amateur with an associate's degree finally finds the Higgs boson, nobody will object because he or she is not a "doctor."

When I share my view as a physicist, then yes, the media should use the title to show that I am delivering a professional opinion and am (probably) qualified to do so. When I am talking about the beauty of the Grand Canyon or whether the Republicans have a chance to take the White House in 2012, I would like to be addressed as Mr. Kovalev.

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■ **While I can understand** Robert Cassola's comments and generally share a similar point of view, I offer here an alternative perspective. As scientists, by allowing people to address us informally, without a title, we could exemplify humility and confidence. In reality, the respect we gain is not from our job title or degree but from our contributions to society and the value we add through our discoveries. We may even find ourselves in circumstances where our scientific training will help some of the "doctors" and "officers" we encounter. Let us show our level-headedness, humility, and knowledge by setting an example: We don't demand respect through titles. We only hope to learn fundamental truths about nature and demonstrate them through data that speaks for itself. I hope that someday our society evolves to the point of regarding a degree solely as license to practice the art rather than as license to be highly regarded.

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■ **I am wondering** if the culture Robert Cassola discusses in his letter is actually generated by creative scientists themselves, who may be having too much fun to worry about the social formality of what they should be called. For example, a common cross-sectional unit is called a "barn" by physicists, instead of 100 fm^2 . And Caltech physicists have been known to call their laboratory the lunatic asylum, even in official publications. Scientists were trying hard to create an environment in their laboratories where junior scientists would be encouraged to challenge authority, without the barrier of social hierarchy.

Sixteen years ago I moved to the US from Germany, where a male professor is addressed as Herr Professor Doctor So-and-so. Having in hand my new PhD, I had labeled all my luggage with "Dr. Yin at Harvard University." When I arrived in Boston, the delivery company called and asked, "Dr. Yin, which specialty of medicine do you practice?" I decided at that time that having people call me "Dr." could cause me more trouble than it was worth.

I've always been inspired and influenced by the success stories coming out of the US, regardless of the informality. Steve Jobs and his friends started Apple computers in a garage in California. Bill

Gates dropped out of Harvard to start Microsoft in the New Mexico desert. And where else but in America would a Chinese professor lead a research group that includes a Faroese graduate student and a French postdoc to work on NASA projects?

Who cares what we are called or how formally we are addressed? We are having too much fun and are too awed by the natural wonders we find in our work.

The real problem for me is confusion about when I am supposed to address people formally versus informally. There is a fine distinction, even in the US. I am still learning after 16 years in the country. As the saying goes, I was "raised in a barn" and am perhaps therefore hopeless.

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Analyses of dimensionless science

Diogo Bolster, Robert Hershberger, and Russell Donnelly have written a useful survey of the application of dimensional analysis (PHYSICS TODAY, September 2011, page 42). The

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