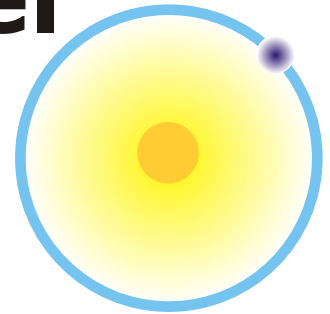


Myths (and Realities!) About Hydrogen Fuel

Rene Carlos



Mankind has known of and studied hydrogen for over 300 years, and applied it to vehicles for over 200--first in balloons and dirigibles, then as high-performance rocket fuel, by military, civil, and commercial organizations. More recently, multiple navies have tested and deployed hydrogen-containing submarines. This is in addition to chemical and nuclear applications, and most likely consumer electronics in the near future. With fuel cost and availability worsening, and concerns that greenhouse gases produced by fossil fuel use are driving climate change, hydrogen has been promoted by some in government and industry as the ultimate widely-available and pollution-free fuel for private automobiles as well. Using fuel-cell technologies, such automobiles are claimed to exhaust nothing but water; hydrogen can also fuel conventional but modified piston engines.

But the devil is in the details. Many of the technical hurdles and shortcomings are usually left out of the conversation. The very claim that hydrogen is abundant and pollution-free is a matter of interpretation. Issues of sourcing and manufacture, as well as practical distribution and handling, haven't been as visible in the debate, while fears of Hindenburg-style disasters have gotten more traction than the evidence would suggest. In addition, fuel cells can use many other fuels besides hydrogen, including gasoline; the future of cars, with electric and hybrid cars also in contention, is far more complicated than the average driver has been led to believe. Even

fuel-cell researchers themselves disagree on hydrogen's merits. This talk will provide a detailed, in-context look at hydrogen energy.

Rene Carlos is a mechanical engineer in the Advanced Composites Group at NASA's Goddard Space Flight Center, Greenbelt, Maryland. In that capacity, he has served on multiple flight projects resulting in operational spacecraft, as well as on ground tests and technology demonstrators. He received his B.S. in Mechanical Engineering, specializing in Materials Science, at Northwestern University. Personally, he has analyzed alternate-fuel conversions for his own vehicles.

**Saturday, March 21, 2009
1:30 pm**

National Science Foundation
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Enter NSF from the corner of 9th N & N Stuart Streets.
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Skeptics to Converge on Bethesda!

NCAS members are encouraged to attend the Center for Inquiry's 12th World Congress, "Science, Public Policy, and the Planetary Community," at the Hyatt Regency Bethesda, April 9-12. Speakers include James Randi, Joe Nickell, Paul Kurtz, Christopher Hitchens, Elizabeth Loftus, *et al.* Visit CFI's website <http://www.centerforinquiry.net/worldcongress/>, for more info. 

Special Event for NCAS Members


Join famous and non-famous skeptics from around the world when NCAS honors the father of organized skepticism. NCAS will bestow its 2009 Philip J. Klass Award on Paul Kurtz, founder and chairman of the Committee for Skeptical Inquiry and Prometheus Books, at the start of the CFI Friday luncheon (11:30 a.m., April 10) at the Hyatt Regency Bethesda, 7400 Wisconsin Avenue, directly above the Bethesda Metro station. Admission for NCAS members is free (or \$35 to include lunch). NCAS members ordering lunch should register at the CFI website above, or by calling 1-800-458-1366. All other NCAS members planning to attend should RSVP at ncas@ncas.org, or by leaving your name and contact info at 301-587-3827. 

March's Drinking Sceptically Event!


On Wednesday, March 11, come to Jackie's Restaurant at 8081 Georgia Avenue in Silver Spring at 7:00 p.m. to join fellow NCASers for the next DC-area *Drinking Sceptically* event. *Drinking Sceptically* is an informal social event designed to promote fellowship and networking among skeptics, critical-thinkers, and like-minded individuals. See ncas.org/ds-ncas.html for more info. 



Penn & Teller Heading East!

Familiar to many skeptics from their award-winning Showtime program, *Bull---t!*, Penn & Teller are a couple of eccentric guys who have learned how to do a few cool things. They defy labels, and at times, good taste. They've performed together for nearly 35 years, skewering the genre of magic, their sold-out audiences, and themselves—very often all at the same time, within each mind-boggling show. On a rare foray from their Las Vegas base of operations, this mini-tour will bring them to Harrah's in Atlantic City, May 22-24. Tickets go on sale March 14. Check <http://preview.tinyurl.com/ptharrahsac> as the date approaches. Also check ncas.org in case plans for a group sale are arranged. 

New NCAS Video on YouTube.com

Rebecca Goldin's January NCAS lecture "How Statistics are Misunderstood in the Media and Society" is the latest posting at NCAS's growing YouTube library, YouTube.com/NCASVideo. 

Kudos

To *Popular Mechanics* magazine for their March cover story on UFOs, an unusually dispassionate and straightforward report, and a worthy addition to their other notable skeptical work, the March 2005 story on 9/11 myths. NCAS President Scott Snell, interviewed by *PM* writer Erik Sofge for the story, comments: "I'm not quoted in the article, but it looks like he took some of my advice about who to talk to and where to look for reliable information, including the University of Colorado's Condon Report, hosted at ncas.org." 