AMERICAN PHYSICAL SOCIETY

New England Section Newsletter

Volume 18	Number 2	Fall 2012

Paul H. Carr & Laurence I. Gould, Co-Editors

NES APS/AAPT FALL MEETING

From the Nanoscale to the Tevascale

Friday & Saturday, November 9 & 10, 2012

Williams College Williamstown, Massachusetts

Topics and speakers for the invited sessions include:

Physics education

David Hammer (Tufts)

Quantum information

Paola Cappellaro (MIT); Robert Schoelkopf (Yale)

Science at the nanoscale

Murugappan Muthukumar (UMass); Michael Naughton (Boston College)

The high-energy frontier and the LHC

Kyle Cranmer (NYU); Martin Schmaltz (Boston University)

APS and AAPT authors should submit abstracts through the APS website at <u>http://abs.aps.org</u>. The deadline for abstract submission is Friday, October 12th.

For registration, travel and lodging information, and an up-to-date conference schedule, and workshop information, please visit the meeting website at <u>http://physics.williams.edu/nes-apsaapt-fall-meeting/</u>

For questions please send email to David Tucker-Smith dtuckers@williams.edu

2012 FALL MEETING OF THE NEW YORK SECTION APS

Physics of Water

October 19-20, 2012 Canisius College Buffalo, NY

2012 SPRING MEETING OF NEW ENGLAND AAPT

Space Science and the Future of Space Exploration

April 27-28 2012 Thayer Academy Concurrent with Massachusetts Physics Olympics

Featured speakers included:

David Latham: Planet hunter

Remote talk by Robert C. Hilborn, Associate Executive Officer, American Association of Physics Teachers

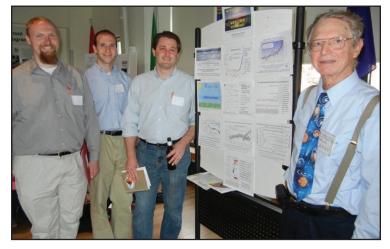
Jonathan McDowell

Eric Silver

Workshops:

PTRA Workshops on Dark Matter with Marti Lyons and Laura Nickerson

Workshop with David Pritchard



Co-Editor Paul H. Carr discusses his AAPT poster paper "Human Influence on Global Warming & Weather Extremes" with MIT physics junior faculty.

2012 Physics Research & Education Gordon Research Conference June 29, 2012

by Charlie Holbrow

Thank you for the APS-NES's financial contribution to the 2012 Physics Research and Education Gordon Research Conference. This contribution is acknowledged on the conference website. The fact that APS-NES would help in these straitened times was an implicit endorsement of the conference that greatly strengthened our successful request for NSF support.

The conference, "Astronomy's Discoveries and Physics Education," was held at Colby College in Waterville, ME, June 17-22, 2012. By all measures it was a fine success. Attendance (126) was good; the weather was good; the talks were excellent; interactions were lively and protracted in the formal sessions, at the poster sessions, and in the evening social gatherings. Evaluations by the participants show a high degree of satisfaction with the conference.

The conference program was intellectually diverse. Outstanding astronomers and astrophysicists presented lectures on research topics ranging from exoplanets and modern cosmology to gammaray bursters and binary pulsars to LIGO (Laser Interferometer Gravitational Wave Observatory) and LSST (Large Synoptic Survey Telescope) and their prospects. Interleaved with these research topics were accounts of ongoing uses of astronomy to teach undergraduate physics and astronomy in large and small institutions. The keynote opening talk by Bob Kirshner (Harvard), and the presentations by David Charbonneau, Chris Stubbs (both of Harvard), Peter Parker (Yale), and Andrew West (Boston U) gave New England a strong presence on the program.

Participants came from diverse institutions, career levels, races, genders, and geographic areas. Thanks to contributions like yours the conference was able to support and attract 27 graduate students (many nominated by their mentors as outstanding TAs strongly interested in teaching) and 18 participants in the early stages of their careers – post-docs or assistant professors. Ten participants were under-represented minorities, and 26 were women. The recruitment of woman speakers was frustratingly difficult; women declined invitations to speak at more than twice the rate at which men declined.

There were speakers and session chairs from industry and NASA, but for the most part the participants were from academia: 68 from research universities, 41 from four-year colleges or institutions where graduate education is not important, and 7 from two-year colleges. This last small number occurred despite strenuous efforts to recruit two-year-college faculty to attend.

The PRE--GRC continues to be a valuable interface between three communities: researchers in R1 universities, teachers in two-year and four-year colleges and primarily undergraduate universities, and education researchers. It is important that each of these three communities continue to find participation worthwhile; it is equally important that they also contribute funds, time, and intellectual effort. Thank you for APS-NES's share in making the 2012 PRE–GRC a great success. I hope you will continue to support and foster this conference.

Obituary

Paul Gustav Klemens May 24, 1925 - July 26, 2012 University of Connecticut, West Hartford, Connecticut, US

Paul Gustav Klemens, an emeritus professor and former chairman of the University of Connecticut Department of Physics, passed away on July 26 at the age of 87. He was born in 1925 in Vienna, Austria, the son of Jewish parents who owned a textile business. At age 12, shortly after the Nazi-orchestrated Kristallnacht, his father was arrested and held in a concentration camp. When his father was released, the family fled to Australia in June 1939.

He learned to speak English, and, demonstrating an aptitude for mathematics, won a scholarship to the University of Sydney, where he earned his B.S. degree in 1946 and his M.S degree in physics in 1948, In the same year, he was awarded a scholarship to Oxford University, where he began to work at the Clarendon Laboratory on thermal conductivity and phonon scattering, in collaboration with R. Berman and F.E.Simon (PhD in 1950).

He has remained faithful to this field throughout his entire life, and the numerous reviews of the subject he published over the years became sign posts for people entering the field. Over more than fifty years, he authored and co-authored more than 200 monographs, journal articles, reports and patents, and was the recipient of numerous professional awards, including the Y.S. Touloukian Award from the American Society of Mechanical Engineers and the International Thermal Conductivity Conference. While in England, he also met Ruth Wiener and her family, who were also Holocaust survivors. The couple married in 1950, and after that, they returned to his adopted country of Australia, where he became principal research officer at the National Standards Laboratory.

In 1959, they emigrated to the United States, where he joined the Westinghouse Research Laboratories in Pittsburgh, Pa., heading a group that worked on an early version of what was later known as "Star Wars" missile defense technology. In 1967, he was appointed chairman of the University of Connecticut physics department, and the family moved to Manchester. During his tenure, he supervised 13 Ph.D. and many other graduate students and worked as a consultant for both industry and National Laboratories, including the U.S. Naval Research Lab and the Los Alamos and Oak Ridge National Laboratories. The 5th International Conference on Phonon Scattering in Condensed Matter recognized him for his work, as stated in the preface of the Proceedings: "A citation was presented to Professor Paul Klemens of the University of Connecticut for his pioneering contributions to the physics of phonon scattering in solids".

During the 10th conference, held in Dartmouth in 2001, it was decided that future awards in that field would be called "Klemens Awards". He was an elected member of the Washington, D.C.-based Cosmos Club, whose members are recognized leaders in the fields of science, literature, arts and politics. Also, he was a fellow with the American Physical Society and the Institute of Physics (U.K.). ■

Submitted by: Q. Kessel, Sue Klemens, A.C.Anderson, R.O.Pohl, Cornell U, & J.P.Wolfe

Note from the Chair of the NES AAPT

Kannan (Jagu) Jagannathan Physics Department, Amherst College

I urge members to attend the exciting fall meeting of the section at Williams College, Williamstown, MA on November 9 and 10. The Abstracts deadline is October 12, and the registration deadline is October 26 for those who would like to sign up for the banquet.

There is a change of co-editors for the Newsletter starting in January 2013. Edward Deveney and Peter LeMaire have kindly agreed to serve and I thank them for undertaking this important responsibility. I also want to thank the out-going editors, Paul Carr and Larry Gould for their tireless and energetic service over the last seven years. They have kindly agreed to advise the incoming editors with any questions they might have at the start of their term.

The Newsletter is very interested in publishing news from members' departments, colleges and universities, as well as news of prizes, awards and honors that members have received for their professional distinction.

2013 PHYSICS TEACHER EDUCATION COALITION CONFERENCE

Preparing the Next Generation of Physics Teachers

March 16 - 17, 2013 Sheraton Inner Harbor Hotel Baltimore, MD

The Physics Teacher Education Conference is the nation's largest meeting dedicated to physics teacher education. It features workshops, panel discussions, and presentations by national leaders, as well as excellent networking opportunities. In collaboration with the American Chemical Society, this year's conference will also feature sessions on chemistry teacher preparation. The 2013 conference is being held in conjunction with the American Physical Society March Meeting. ■

http://www.ptec.org/conferences/2013/

NEWS FROM THE SECTION

This is part of a place reserved for Your Department News. We look for your contributions to the next issue of the Newsletter.

This contribution has not been peer-refereed. It represents solely the view(s) of the author(s) and not necessarily the views of APS.

EDITORIALS AND LETTERS TO THE EDITORS

Editorial Board: Russ Harkey <rharkay@keene.edu>, June Matthews <matthews@mit.edu>, Wade Sapp (ex officio) <WSapp@as-e.com>

Please Note: The content of what follows expresses each writer's considered opinion and should not be construed as representing any official position of any organization, including the Executive Board of the New England Section of the American Physical Society.

The issue of anthropogenic global warming (AGW) is not settled. This can be seen from the Letters below as well as contributions to the debate existing in recent publications of this Newsletter (Fall 2007 through Spring 2011 issues). These can be obtained from the NES APS website <u>http://www.aps.org/units/nes/newsletters/</u>).

Given the importance of the topic, we welcome letters (positive or negative) about these issues or *any other issues*. Examples might be: (1) Message from the Chair, (2) Interesting topics from NES APS institutions (such as new hires or new programs), (3) Message from the Nominating Committee Chair about positions to be filled on the Executive Board, or (4) Recent Executive Committee highlights. The Newsletter is published twice yearly (Fall and Spring).

-Paul Carr and Larry Gould, Co-Editors NES APS Newsletter

PAUL CARR — EDITORIAL COMMENTS PLUS OTHER CONTRIBUTIONS

Conference To Save Our Future

by Paul H. Carr, www.MirrorOfNature.org

In 1972 MIT researchers projected an economic and food-per-capita collapse, in their book Limits to Growth. Their predictions, which include the population explosion and non-renewable resource depletion, have been accurate to date. They were evaluated at the Conference to Save our Future held at the Silver Bay Conference Center, Lake George, NY, July 28-Aug 4, 2012.

The 130 attendees came from the United States, United Kingdom, Canada, Australia, Spain,

India, and Pakistan. Physicists Robert Bercaw and V. V. Raman were the co-chairs of this Institute of Religion in an Age of Science (<u>www.iras.org</u>) conference.

Futurist Ruben Nelson of Foresight Canada enjoins us to co-create a new form of civilization by yoking scientific and technological logos with moral motivation and meaning, mythos. This was in response to the three-fold challenges:

(1) Weather extremes from global warming,

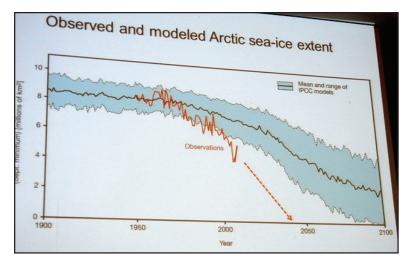
(2) The exponential population explosion, and

(3) Depletion of critical resources such as fossil fuels.



L – R, Futurist Ruben Nelson, http://www. foresightcanada.ca/ Robert Bercaw, Emeritus Physicist, NASA Glenn, Co-Chairman V. V. Raman, Prof. of Physics & Humanities Emeritus, Rochester Institute of Technology, Co-Chair

Henry N. Pollack, professor of geophysics emeritus at the University of Michigan and author of "World Without Ice," spoke on the earth's changing climate. This is evident in the receding snow caps of the Himalayas, which feed major rivers in China & India. The water supply of two billion people is threatened. This is also evident in the US. The Colorado River. whose source is the snowcapped Rocky Mountains, no longer reaches the sea. Dwindling fresh water supplies and draughts are limiting the fruitfulness of our



Arctic Sea-Ice is melting more rapidly than IPCC models predicted.

agriculture. Arctic sea-ice is melting more rapidly than IPCC (United Nations Intergovernmental Panel on Climate Change) models have predicted. The Arctic could be having an ice-free summer by 2030.

Global warming by 2030-2039 could shift agricultural production from the South to the presently too-cold climates of the North. When Ruben Nelson was asked, "Should US citizens move to Canada?" his response was, "Get in line! We already have people who find the southwestern US too hot summering in Canada." The Canadian banking system was the most stable in the Western World, after US and European banks crashed on 2008 due overinvestment in toxic mortgages.

Janet Ranganathan, vice president for science and research at the World Resources Institute, confronted the challenge of feeding two billion more people in her talk entitled, "The Great Balancing Act: How to Feed Nine Billion People while Sustaining Ecosystems in a Changing Climate." She stated, "Since the global wild fish catch has leveled off, fish farming must increase." Strategies for responding to these challenges include restoring degraded lands, reducing food waste, and reducing competition for food crops from fuels.

Jorgen Randers in his book 2052: A Global Forecast for the Next Forty Years predicts that the world population will peak at eight billion in 2040 (Ref 1). The population explosion in underdeveloped counties is being moderated by the Bill and Malinda Gates Foundation's investment of four billion dollars in birth control technology. The population of developed countries has stabilized. Randers forecasts that food production could crash after 2052. There will nevertheless be enough food for those who can pay.

Physicists V. V. Raman's talk "Energy: Some Perspectives from Physics" and Paul H. Carr's workshop, "Can Technologies Save us in Time?" described advances in non-carbon-emitting technology (ref 2).

Brian Czech, president of the Center for the Advancement of the Steady State Economy, advocated this economy to prevent environmental degradation of our water, soil, plants, and endangered species. A steady state economy is preferable to periodic depressions.

Developed counties are trending toward such an economy according to Jorgen Randers. The current dominant global economies, particularly the United States, Europe, and Japan with a population of one billion will stagnate. China and BRISE (Brazil, Russia, India, South Africa and ten leading emerging economies) with a population of four billion will progress. Their demand for limited fossil fuels and limited metal resources will increase, as they strive to make their per capita Gross National Product comparable to that of the developed countries. Fortunately new knowledge-based information technology does not stress natural resources as much as material manufacturing. Better software propelled Google's spectacular growth.

Bron Taylor, Professor of religion and environmental ethics at the University of Florida, gave a hopeful talk "Green Religion: On the Possibility that 'Reverence for Life' Ethics Might Help Secure a Flourishing Future." He advocated significant religion-resembling cultural innovations that consider nature sacred and intrinsically beautiful. Similarly Brian Czech recommended that the Happiness-Satisfaction index should be considered along with the materialistic Gross National Product. The best things in life are not things.

The workshop "Stealing the Fire of the Gods and Healing the World" by psychiatrist Albert Levy and his son Maxwell showed how moral principles were communicated in ancient Greek myths. These and the biblical stories that strive for creative conflict resolution can lead us to a new moral science.

Rachel Carlson's "Silent Spring (1962)" helped launch the environmental movement that awakened the world to the ecological threat of DDT, resulting in its world-wide ban. Compelling stories such as this could create the new mythos needed to save our planet. ■

References:

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(1) Jorgen Randers, 2012. "2052: A Global Forecast for the Next Forty Years" <u>http://www.lastcallthefilm.org/en/blog/jorgen-randers-presents-2052</u> Randers was 3rd author of "Limits to Growth," 1972
(2) Paul H. Carr, 2012. "Can Technologies Save Us in Time?" <u>http://www.mirrorofnature.org/IRAS_CAN%20</u> <u>TECHNOLOGY%20SAVE%20US2.html</u>

LARRY GOULD — EDITORIAL COMMENTS PLUS OTHER CONTRIBUTIONS

Winning The AGW Science Debate: Here's How

by S. Fred Singer, <u>http://www.nipccreport.org/</u>

The science of climate change is not just of academic interest but has been leading to policies for large-scale changes in energy use and supply -- with important economic consequences. The burden of proof for AGW therefore falls on those who call for such policies. They must demonstrate with reasonable certainty that human activities are causing global warming, that a future warming will produce significant economic and ecological damage, and that it would be more cost-effective to mitigate now rather than to adapt later. They must also be ready to respond to any critique of the underlying science.

A recent example of irresponsible AGW claims is a just-released Statement by the American Meteorological Society, the same crew that cannot predict the weather three days in advance.

The concluding section begins:

There is unequivocal evidence that Earth's lower atmosphere, ocean, and land surface are warming; sea level is rising; and snow cover, mountain glaciers, and Arctic sea ice are shrinking. The dominant cause of the warming since the 1950s is human activities. This scientific finding is based on a large and persuasive body of research. The observed warming will be irreversible for many years into the future, and even larger temperature increases will occur as greenhouse gases continue to accumulate in the atmosphere. Avoiding this future warming will require a large and rapid reduction in global greenhouse gas emissions. The ongoing warming will increase risks and stresses to human societies, economies, ecosystems, and wildlife through the 21st century and beyond, making it imperative that society respond to a changing climate.

I would start by asking AGW supporters the following question "What is your single most important piece of evidence for AGW?" I have received many answers to this question; most of them can be disposed of in a trivial way. Some examples are:

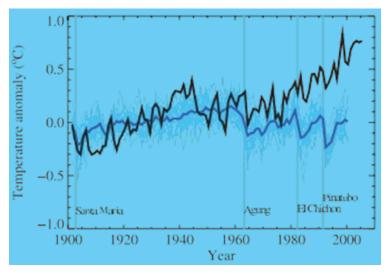
- "Man-made CO2 is increasing in the atmosphere." True, but is warming increasing as a result?
- "Climate models predict rising climate temperatures in the future." True, but models are not evidence.
- "Glaciers are melting, sea ice is shrinking, storms are increasing, droughts and floods are increasing." Even if any of these were true, they don't reveal the cause and certainly cannot furnish temperature data like thermometers.
- "Sea Levels are rising." But they have been rising for 18,000 years, and there is no evidence that the current rate of rise is affected by temperature; 20th century data show no acceleration.
- A common misleading reply by AGW supporters: "The past decade is the warmest in X years" This may be true, provided X is chosen appropriately, but the current trend over the past decade has been approximately zero. [One must not confuse Trend (measured in degrees C/decade) with temperature (measured in degrees C). According to climate models, it is an increased temperature trend that should relate to any increasing trend in greenhouse gases.]

But note also that climate seems to follow long-term cycles of about 1500 years [Singer and Avery, *Unstoppable Global Warming: Every 1500 years*, 2007]. If the 'Bond-cycle' is active now, we may expect further, irregular, warming in the present century and beyond – entirely due to natural causes, likely related to the Sun.

Finally, a common response simply appeals to the report of the UN-IPCC (Intergovernmental Panel on Climate Change). To which one should say: "OK, then let's see if it holds up to scrutiny." [Note that the "evidence" presented as crucial has been different in every one of the past four IPCC assessment reports.] The latest IPCC claim for AGW is laid out simply in the Summary for Policymakers on page 10 of the 2007 report: "Most of the observed increase in global average temperatures since the mid 20th century is very likely [i.e., 90-99% sure] due to observed anthropogenic increase of greenhouse gases."

This claim is advanced in the SPM and eventually backed up by fig. 9.5 on page 684 of the 2007 report. The models are "fitted" to the observed temperature record from 1900 up to about 1970 by choosing suitable sensitivities and model parameters, using "expert judgment." But the figure shows a large gap after 1970 between reported temperatures and unforced models (i.e., models that do not incorporate an increase in GH (greenhouse) gases).

The IPCC, claiming that they completely understand all natural forcings, now asserts that only AGW (i.e., forcing by anthropogenic GH gases) can explain the gap between the reported global average surface temperature (GAST) and models that do not include GH-gas forcing. (This is an instance of the common logical fallacy of 'argument from ignorance.' Even if the warming since 1970 were exceptional, and even if science were unaware of any natural explanation for it, that unawareness would not constitute certain evidence that GH gases are responsible.)



Heavy Black line: Global Ave Surface Temp Blue: Superposition of models without GH-gas increase. Source: IPCC-AR4-Fig. 9.5b

Even if we were to accept the IPCC's assertion for the sake of argument, note that the temperature curve refers to global surface average temperature and that the models are retro-fitted to the temperature data by a suitable choice of climate sensitivities and model parameters.

Fair enough, but can the same sensitivities and parameters also explain temperature data that are non-global: e.g., the mean for the northern hemisphere (NH) and the mean for the SH? Can they explain ocean temperature data? Can they explain absence of atmospheric temperature trends? And finally, can they explain temperature trends derived from non-thermometer data of various proxies (tree rings, lake sediments, stalagmites, ice cores, etc.)?

Note that the sensitivities and parameters are chosen with great care in order to reach agreement with the reported GAST data; yet the same IPCC report admits to very large uncertainties about most forcings (in fact, 11 out of 16), particularly from aerosols and clouds. But the greatest uncertainty arises from implicit feedbacks that the models assume will amplify direct warming from GH gases. In particular, there is uncertainty about the feedback from water vapor and clouds: the IPCC claims a positive feedback, i.e., an amplification of GH forcing of nearly threefold -- while others adduce evidence for a negative feedback, i.e., opposing GH warming. This is a matter that needs to be resolved urgently; and, until it is, the science underlying the "official" IPCC claim cannot seriously be regarded as "settled."

Further, the models are largely unable to represent or capture important natural forcings, for example, well-documented climate oscillations involving the oceans, such as the North Atlantic Oscillation or Pacific Decadal Oscillation. Also omitted from the models are the effects of solar-activity changes-- in spite of excellent evidence, supported by a growing body of published results, that solar-caused cosmic-ray variations strongly correlate with terrestrial climate changes.

Turning next to climate observations, there are many questions about the reliability of the reported land-surface temperature data reported by weather stations. Mid-troposphere temperatures do not agree with surface trends -- a disparity that a National Academy of Sciences climate panel tried unsuccessfully to resolve in 2000. It seems that mid-troposphere temperature trends derived from radiosondes in weather balloons and from microwave instruments in

satellites both show negligible tropical warming in the last decades of the 20th century. Data are never perfect and there may be corrections necessary. However, for the time being, these two independent datasets show remarkable agreement with one another, and remarkable disagreement with what the IPCC models would expect as a result of anthropogenic warming.

Ocean data have been notoriously difficult to reconcile, since they employ so many different types of instrumentation. These include buckets, buoys, ship-engine cooling-water inlet temperatures, and both infrared and microwave satellite observations. Unfortunately, there are problems with each of the datasets; their coherence is often different from what one might expect. One example: inlet temperatures seem to be warmer than bucket and drifter buoys that measure temperatures close to the surface-- just opposite to what would be expected.

Additional ocean datasets do not show the warming observed by land weather stations; for example, night-time marine air temperatures (NMAT) confirm the strong warming up to 1940 and cooling to 1975, but show only a small recovery post-1978, with maximum temperatures in the 1990s no greater than 1940. Similarly, data of ocean heat content (OHC) do not show a warming trend from 1978 to 2000 -- although it should be noted that 20th-century OHC data is of poor quality and has been subject to frequent corrections.

Finally, we have non-thermometer proxy data, which mostly show no warming from 1978 to 1997. Most confirm the 1910-40 warming from weather stations -- but also show no post-1940 warming. It would be interesting to examine the large dataset assembled by the authors of the "hockeystick" to see what temperatures are observed after 1978; unfortunately, their published curve stops at just that point and their post-1978 data have not been accessible.

It should be clear by now that the strong AGW claims of the IPCC are based on rather flimsy evidence. We look forward to the next IPCC report due in 2013-14 to see if additional data and model results show better support for their claim. I serve as an "expert reviewer" of this report but have not seen any such evidence in the first draft.

In the meantime we can post certain question to the AGW supporters and await their answers:

- Why did climate warm between 1910 and 1940?
- Why did climate cool from 1940-1975? If the cause is assumed to be aerosols, also please explain the separate trends observed in the northern and southern hemispheres and compare with climate models. This asymmetry has been a puzzle for some time.
- Why is there a step increase (temperature "jump") in 1976-77 -- and again in 2001-2002? Such jumps are not in accord with the slow steady increase calculated by climate models.
- Why is there no pronounced warming trend since 2002?
- And finally, why no warming for night-time marine air temperatures, troposphere, and proxies in the last two decades of the 20th century -- in conflict with reported land-surface temperatures? Could one admit the possibility that there might be something wrong with the land-surface data used by IPCC as 'evidence' for AGW?

For these and many similar reasons, scientific debate about the extent and implications of the anthropogenic contribution to past and future global warming is essential for formulating a rational energy policy as the keystone for economic prosperity.

S. Fred Singer is professor emeritus at the University of Virginia and director of the Science & Environmental Policy

Project. His specialty is atmospheric and space physics. An expert in remote sensing and satellites, he served as the founding director of the US Weather Satellite Service and, more recently, as vice chair of the US National Advisory Committee on Oceans & Atmosphere. He is a Senior Fellow of the Heartland Institute and the Independent Institute. He has held several government positions and served as an energy adviser to Treasury Secretary Wm. Simon. He co-authored the NY Times best-seller "Unstoppable Global Warming: Every 1500 years." In 2007, he founded and chaired the NIPCC (Nongovernmental International Panel on Climate Change), which has released several scientific reports [See www.NIPCC.org]. He is founding chairman of Virginia Scientists & Engineers for Energy & Environment (VA-SEEE). For recent writings see http://www.americanthinker.com/s_fred_singer/ and also Google Scholar.

Editor's Notes

Although there are a large number of claims promoting the idea of dangerous "global warming/ climate change", there are also (in contrast to what may seem to be the case) many arguments against such claims. What follows are some of those (along with arguments against some other popular claims of alarm).

Last month's Editorial in Nature [489, 335–336 (20 September 2012)] is titled "Extreme weather" and starts with the statement: "Better models are needed before exceptional events can be reliably linked to global warming."

The Editorial is bolstered by the Environment and Public Works report (8/1/12) by John Christy, Distinguished Professor of Atmospheric Science, Alabama's State Climatologist and Director of the Earth System Science Center at The University of Alabama in Huntsville. See full report at: http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=66585975-a507-4d81-b750-def3ec74913d

A recent article, titled "Apocalypse Not: Here's Why You Shouldn't Worry About End Times" by well-known popular-science writer Matt Ridley, examines alarmist claims about a number of issues, including those raised by Rachel Carson's book "Silent Spring" (1962) and the Club of Rome's document, "The Limits to Growth" (1972). <u>http://www.wired.com/wiredscience/2012/08/ff_apocalypsenot/all</u>

An OpEd — signed by a number of prominent scientists and engineers, including some APS members, a NASA scientist-astronaut, a former president and CEO of the New York Academy of Sciences, and the aerospace engineer and designer of Voyager — is titled "No Need to Panic About Global Warming: There's no compelling scientific argument for drastic action to 'decarbonize' the world's economy" (Wall Street Journal, 2/25/12). http://online.wsj.com/article/SB10001424052970204301404577171531838421366.html

That OpEd had a large number of responses. The original authors submitted a reply and chose to limit their response "to the letter of February 1, 2012 by Kevin Trenberth and 37 other signatories, and to the letter by Robert Byer, President of the American Physical Society of February 6"

At the 62nd Meeting of Nobel Laureates (Lindau, 2012) Nobel Laureate in Physics, Ivar Giaever, presented a talk titled "The Strange Case of Global Warming" which was critical of "global warming/climate change" claims and methodology. The video can be seen at: http://www.mediatheque.lindau-nobel.org/#/Video?id=1410

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