

**AMERICAN PHYSICAL SOCIETY**  
*New England Section Newsletter*

---

Volume 16    Number 1    Spring 2010

---

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

**SPRING 2010 MEETING OF THE NEW YORK  
SECTION & NEW ENGLAND SECTIONS OF THE APS**

**April 23-24, 2010**  
**Union College**  
**Schenectady, NY**

**Topic: Modern Nuclear Applications**

Registration, abstract, and housing information can be found at  
<http://www.aps.org/units/nyss/meetings/meeting.cfm?name=NYS10>

---

**Fall 2009 Joint Meeting of the New England Sections of the APS and AAPT**



**Our Universe – 400 Years After Galileo**

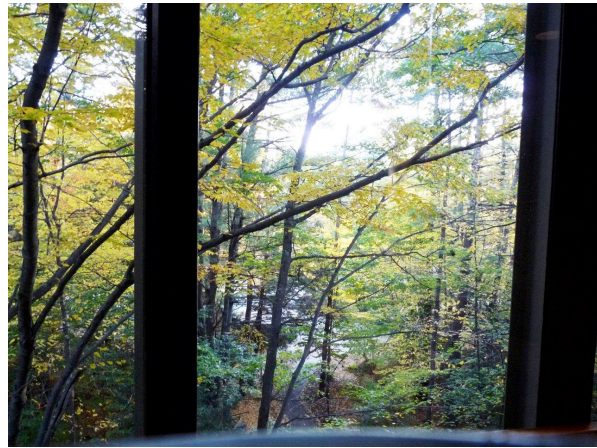
This contribution has not been peer refereed. It represents solely the view(s) of the author(s) and not necessarily the views of APS.

**Friday and Saturday – October 16-17, 2009**

**University of New Hampshire**

**Durham, NH**

Conference web site: <http://astrophysics.sr.unh.edu/nesaps/>



## **INVITED SPEAKERS**

### **Professor Galileo's 21st Century Syllabus**

Prof. Timothy Slater (University of Wyoming)

### **Galileo's Ideas Might Have Been Better Received If He Understood Cognitive Science**

Dr. Stephanie Slater (University of Wyoming)

### **Fermi Gamma-ray Space Telescope: First Year Highlights**

Dr. David J. Thompson (NASA Goddard Space Flight Center)

### **After 400 years, some of us still get it wrong: Science Errors on TV**

(A Personal Experience)

Prof. Neil F. Comins (University of Maine)

He presented information and how producers manipulated science presented by the narrator to provide incorrect information that viewers are likely to incorporate into their own belief system.

**NASA's Kepler Mission** Dr. Andrea Dupree, Harvard Smithsonian Center for Astrophysics

**Imaging the Interstellar Wind and the Boundary of the Heliosphere  
in the “Light” of Neutral Atoms using the Interstellar Boundary Explorer (IBEX)**  
Prof. Eberhard Möbius (University of New Hampshire)

**NES APS CONFERENCE REPORTS**  
**Report on the October 2009 Greater Boston Area**  
**Statistical Mechanics meeting**  
**Brandeis University**

(communicated by Harvey Gould, Clark University)

Approximately 80 people attended the eleventh annual Greater Boston Area Statistical Mechanics meeting on Saturday, October 10, 2009 at Brandeis University. The main goal of these meetings is to offer an informal and supportive environment where people from a variety of departments and institutions can meet and exchange ideas. In addition our goal is to give students a venue where they can discuss their work with more senior scientists. The format is four invited talks of 30 minutes each and contributed talks of about 3–4 minutes each. Plenty of time is set aside for informal conversations.

The invited speakers for this year’s meeting were

- Rama Bansil, Boston University, “Bacterial motility in mucin gels.”
- Zvonimir Dogic, Brandeis University, “Chiral self-assembly of rod-like viruses.”
- Cesar A. Hidalgo, Harvard University, “The statistical physics of economic development.”
- Christian Santangelo, UMass, Amherst, “The mesophases of soft-sphere aggregates.”

The tradition of the meeting is to invite speakers who have recently embarked on their independent research careers, or speakers who are new to the Boston area, or more senior people whose work deserves greater recognition. (Rama Bansil had been in Washington, DC the past two years as a grant monitor for the NSF.)

There were 26 contributed talks, a number consistent with previous years for which the number of contributed talks has ranged from 23 to 35. All talks were given with the aid of a Windows or Macintosh notebook computer. One of the better contributed talks was given by Brad Marston from Brown University who did a real time simulation of a climate model taking advantage of the multicore processors in the latest notebook computers. The talks covered the broad applications of statistical mechanics with an increasing emphasis on biologically related systems.

Institutions represented included BAE Systems, BBN Technologies, Boston College, Boston University, Brandeis University, Brown University, Clark University, The College of Holy Cross, Frontier Technology Inc., Harvard University, Johns Hopkins University, Massachusetts College of Pharmacy, MEARS Technologies, MIT, Mount Holyoke College, Northeastern University, Saint Anselm College, UMass Amherst, UMass Boston, University of Connecticut, Storrs, University of Connecticut health Cae Center, University of Maine, Wellesley College, and WPI. There were approximately 45 graduate students, 15 post-docs, 15 faculty members, 3 undergraduate students, and 4 people from industry in attendance.

The meeting has been subsidized by the New England Section of the APS for the past eleven years at a cost of approximately \$10 per person for bagels, coffee, and lunch (sandwiches). As a result, the organizers of the meeting have not had to collect a registration fee and organizing the meeting has been relatively straightforward. After many years of threatening to do so, we collected a \$10 registration fee from those who failed to pre-register.

The meeting is open to anyone, including non-members of the APS and NES, but nonmembers are encouraged to join both. The NES would like to encourage meetings of this type in the New England area and would welcome requests for financial assistance. The main criteria are that the meeting be open to all, widely announced, and make an effort to involve people who are not necessarily expert in the field. Requests for subsidies for student attendance are particularly welcome.

The organizers of the meeting are Bulbul Chakraborty, Claudio Chamon, Harvey Gould, and Bill Klein. More information about the meeting, including titles of the contributed talks and previous meetings, can be found at <[physics.clarku.edu/gbasml/](http://physics.clarku.edu/gbasml/)>.

Next years meeting is tentatively scheduled for a Saturday in October 2010.

## EDITORIALS and LETTERS TO THE EDITORS

*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 Fall 2009 issues). These can be obtained from the NES APS website <http://www.aps.org/units/nes/newsletters/>.

Given the importance of the topic, we welcome letters (positive or negative) about the issues. The Newsletter is published twice yearly (Fall and Spring).

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

Editorial By Paul H. Carr, [www.MirrorOfNature.org](http://www.MirrorOfNature.org)

### **COPENHAGEN 1600, 2009, 1941**

#### **COPENHAGEN 1600: Tragedy**

In the 1600, the tragedy of Shakespeare's play, Hamlet, Prince of Denmark, was rooted in Hamlet's indecision. The Ghost of prince Hamlet's father appeared saying that while sleeping he had been poisoned by his brother Claudius, who became the King and married the Queen, Hamlet's mother. The Ghost demanded that Hamlet avenge the murder.

Hamlet needed more evidence, so he staged a play for the King and his court reenacting the murder. King Claudius' reaction confirmed his guilt, but Hamlet did not seize this moment to avenge his father. This missed opportunity led to a series of mishaps, which ended with the death of Hamlet, his mother the Queen, and King Claudius.

This play shows the tragic consequences of indecision and missed opportunity (see Copenhagen 2009 Climate Conference below). It also shows the complexity and ambiguity of human motivations (See Copenhagen 1941: Heisenberg's Visit to Bohr below.)

#### **COPENHAGEN 2009: CLIMATE CONFERENCE. Missed Opportunity?**

Let us fast-forward to December 2009. Was the United Nations Climate Conference in the Danish capital Copenhagen a modern example of missed opportunity with tragic consequences for human life on this earth?

A basic problem: of the 193 countries attending, only 30 countries (including the United States and China) are responsible for 90 per cent of the global warming emissions.

After a marathon all night session, the international effort to combat climate change ended with the Copenhagen Accord. The 193 countries grudgingly agreed to “take note.”

President Obama, who was active in brokering the Accord concluded, “This progress did not come easily, and we know that this progress alone is not enough. We’ve come a long way, but we have much further to go.”

UN Secretary General Ban Ki-moon said he welcomed the deal. "It may not be everything we hoped for, but this decision of the Conference of Parties is an essential beginning and we must transform this into a legally binding treaty next year. The importance will only be recognized when it is codified into international law."

### **COPENHAGEN 1941: Heisenberg’s Visit to Bohr**

A parallel between the ambiguity of human motivations and Heisenberg’s Uncertainty Principle.

I recently saw the stage version of English playwright Michael Frayn’s *Copenhagen* performed by the Peterborough NH Players. It was performed on a stage with wooden chairs for the three characters: Werner Heisenberg, Niels Bohr, and his wife and confidante Margrethe. The back of the stage served as an imaginary Copenhagen door on which Heisenberg knocked in 1941 during the Nazi occupation and was greeted by his former teacher and mentor Niels Bohr. The physics community held Bohr in such high regard that he was often referred to as “The Pope.” His Copenhagen interpretation of quantum mechanics still predominates.

At the conclusion of the play, the mushroom cloud accompanying the loud explosion of the first atomic bomb in 1945 was projected on a screen at the back of the stage. Heisenberg who had worked on a nuclear reactor in Nazi Germany, said “I have never killed anyone.” Bohr could not claim this as he had contributed to the US bomb as a member of Oppenheimer’s team at the Los Alamos. Bohr worked there after escaping from Copenhagen in 1943 when the Nazis sent the Jews to concentration camps. In such circumstances, his working on the bomb could be considered morally justifiable.

The DVD which I saw several years ago was much more illustrative. It showed Heisenberg, surrounded by Nazi soldiers, getting off the train from Germany to Copenhagen. It also showed him in the elegant mansion in which the Bohrs lived as well as going for a walk nearby to avoid being recorded on Nazi microphones. When they returned from the walk, Bohr was very angry.

However I do not remember the dialogue on the DVD being as nuanced as in the play. Its purpose was to show that there is some kind of parallel between the ambiguity of human motivations and Heisenberg’s Uncertainty Principle. We often do not know all the reasons why we do what we do. We also do not see ourselves as others see us. We have selective memories. Heisenberg described the multiplicity of rationalizations when he said: “It is not like going through 2 slits but through 20 slits.”

Multiple motivations were given for Heisenberg's 1941 trip to Copenhagen.

1. To renew the relationship with his former teacher and mentor.
2. To impress his former teacher with his important position in Germany.
3. To see if he might be able to use his influence to help Bohr and the Jews in Nazi-occupied Denmark.
4. To ascertain what Bohr knew about the Allied bomb effort.
5. To reach a secret agreement with Bohr in which they would both subvert development of the bomb for humanitarian reasons. This had to be approached discretely, as it would have been a treasonable offense in Nazi Germany.

Another example was the multiple answers that Heisenberg gave Bohr's question, "Why didn't you calculate the amount of fissionable Uranium-235 needed to make a bomb?"

1. I did not think of it.
2. I did not think it was necessary

It later came out in the play that Heisenberg's calculation had been so high that the Germans had not considered it technologically feasible to separate U-235 from U-238. (U-235 is only one percent of U-238 in naturally occurring Uranium.) To make the calculation, Heisenberg needed to know the neutron absorption cross-section and the diffusion length, which he may not have been known that accurately. Heisenberg may have played it safe in quoting a high number. If his calculation had been low and had initiated an unsuccessful bomb program, the Nazis might have executed him.

Heisenberg's version of the 1941 meeting appeared in Robert Jungk's book exculpating the German scientists, suggesting that they had surreptitiously "dragged their feet" to resist Hitler. When Bohr read Heisenberg's account, he was very angry. He thought that Heisenberg had misstated what had happened. Bohr wrote a letter to Heisenberg, but characteristically he did not send it. He went on re-drafting it as he had his scientific papers. In fact, he went on redrafting it for the rest of his life. The letter was found after his death among his papers.

As Pogo once said: "We have met the enemy and he is us." In spite of tremendous scientific progress since 1600, we are still challenged to transcend our human limitations.

## **Comments: Gerald Guralnik**

I read the play when it first came out and found that a good deal of its content corresponds to what Heisenberg told me at a conference\* he ran at a small resort outside of Munich in 1965. In a private conversation, he told me the story of his now famous meeting with Bohr during the war and tried very hard to support his claim that he had done his best to stop a successful development of a Nazi bomb.

Prof. Gerald Guralnik  
Elementary Particle Theory  
Physics Department, Brown University

---

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

\*The work presented by Prof. Guralnik at the conference he mentions was based on his paper predicting the existence of what is now called the Higg's boson. [G.S. Guralnik, C.R. Hagen and T.W.B. Kibble, "Global Conservation Laws and Massless Particles" *Phys. Rev. Lett.* **13**, 585 (1964)]

## **Comments: Harvey Charlton**

Missed opportunities and inaction are often coupled in human affairs and may result in tragedy, maybe even global tragedy, but most often in mediocrity or decay. The ambiguities of the human condition do result in many forms of uncertainties.

Prof. Harvey Charlton  
Department of Mathematics  
North Carolina State University

**Editorial Comments By Laurence I. Gould, <http://uhaweb.hartford.edu/LGOULD>**

## **"Global Warming/Climate Change": Update on Further Developments**

The arguments, which contradict the AGW alarmist claims, continue to build. So too does the evidence exposing the suppression and manipulation of scientific data in order to support those claims. "Climategate" has become just one of the popular term referring to such events. Nevertheless, there are those who maintain (without evidence) that the conclusions of the IPCC — concerning dangerous AGW — are not altered by those events.

In the Editorial section of past issues of the Newsletter I have tried to explain (as have others through their Letters) why the AGW alarmist claims are seriously flawed. But we also print contrary positions — and will continue to do so. We have, in fact, printed (verbatim) all Letters received (both pro and con ).

Since the last Newsletter was published we have received only two Letters. They are printed below. In case the reader is interested in seeing a variety of supporting documents to reference 2 of Roger Cohen's Letter, please click on "Responses to the 2010 APS Email" at the link given in his references.

The broad issue regarding AGW is, I think, one of a corrupted scientific method. So, here — for those who care — are some remarks on that issue from the 1974 Caltech Commencement address, "Cargo Cult Science", by Richard Feynman:

*... We've learned from experience that the truth will out. Other experimenters will repeat your experiment and find out whether you were wrong or right. Nature's phenomena will agree or*



*they'll disagree with your theory. And, although you may gain some temporary fame and excitement, you will not gain a good reputation as a scientist if you haven't tried to be very careful in this kind of work. And it's this type of integrity, this kind of care not to fool yourself, that is missing to a large extent in much of the research in Cargo Cult Science [pseudo science].*

*... you should not fool the layman when you're talking as a scientist ... I'm talking about a specific, extra type of integrity that is not lying, but bending over backwards to show how you're maybe wrong, that you ought to do when acting as a scientist. And this is our responsibility as scientists, certainly to other scientists, and I think to laymen.*

*... so I have just one wish for you — the good luck to be somewhere where you are free to maintain the kind of integrity I have described, and where you do not feel forced by a need to maintain your position in the organization, or financial support, or so on, to lose your integrity. May you have that freedom.*

[transcript of the complete speech can be found at  
<http://calteches.library.caltech.edu/51/2/CargoCult.pdf> ]

## **Email LETTER to the Editors by Peter Friedman**

(received 31 December 2009) —

To the Editors:

In the face of all of the hysteria, supported by claims of a “scientific consensus,” what do we really know about Global Warming?

Although the earth has experienced some warming in the industrial period, we know that its temperature has also varied over long and short-term time scales and that the causes of these cycles are poorly understood. We know that the available temperature data have been taken over a time span that is short relative to the natural cycles in the climate and that these data are plagued by errors and biases. We know that proxy data used to fill the void in temperature data are affected by a myriad of other forcing functions. While we speculate that the relatively minor greenhouse contribution of CO<sub>2</sub> might be magnified by a feedback from water vapor, we do not know the magnitude of this feedback – or even whether it is positive or negative.

While a number of computer models paint apocalyptic scenarios, we know that the models are not yet predictive – as evident by their failure to predict current temperature trends. This should not come as a surprise to anyone familiar with the practical limitations of computer modeling. After all, the complex interaction between events at various length scales prevents modeling most relatively simple fluid flow problems, unless the solutions incorporate sufficient empirical data. Clearly, the earth's climate is vastly more complex and involves interactions over a much greater range of scales than the still unsolvable flow around a golf ball.

So what do we really know about Global Warming? The honest assessment is that, despite our ever-expanding knowledge base on the subject, we have a very long way to go before

we can claim that we understand climate change, much less predict it with a reasonable level of confidence.

In the face of this reality, the APS leadership has adopted a naïve and alarmist position on behalf of its members, claiming “incontrovertible evidence” and urging “policies and actions that will reduce the emission of greenhouse gases.” In taking this political position, the APS leadership has abdicated the organization’s scientific responsibility.

In an attempt to encourage a review of the official APS position, several members contacted a sample of colleagues via email. The response by the APS leadership has been chilling; rather than promoting the free exchange of information in order to facilitate a scholarly debate, APS President Murray has sought to squelch it by implicitly threatening sanctions against the dissenters. This comes at a time when the scrutiny of the world is focused on emails from East Anglia University, which, among other things, demonstrated that skeptics have been silenced in order to manufacture a consensus.

The APS should be careful about jeopardizing its reputation by jumping onto the consensus bandwagon and prematurely endorsing unsubstantiated conclusions. It has a responsibility to promote a thorough and independent assessment of the science before it is used as a basis for policy decisions that are potentially destructive to developed nations as well as energy-starved third world nations.

Peter D. Friedman  
Dartmouth, Massachusetts

## **Email LETTER to the Editors by Roger Cohen**

(received 2 March 2010) —

To the Editors:

Of sins, it is often said that, “It is not what you do that counts, it is what you do after you do what you do.” The idea is that everyone makes mistakes, but circumstances usually provide opportunities to make things right. And it is how one reacts to those opportunities that lends real insight to character. The “second rate burglary” of Watergate was serious, but the cover up made it terminal.

When the APS promulgated the 2007 Policy Statement on Climate Change, with its now infamous “The evidence is incontrovertible,” it made a mistake. Pretty much everyone agrees with that. But APS leadership was then given multiple opportunities to set it right – to conduct itself in a manner consistent with the Society’s rich tradition. So far, it has flubbed these opportunities. Here is the record.

The story starts with the [May 2009 Open Letter to the Council](#) [1], in which an alternative to the 2007 Statement was proposed. The alternative challenged scientific conclusions known to be derived from IPCC reports. Things got off to a good start when the matter was referred to an ad hoc committee to report back in November. But then matters started downhill. The Ad Hoc

Committee endorsed the content of the 2007 Statement, while remanding it to POPA to address issues of “clarity and tone.” At the same time the Committee rejected the proposed alternative, referencing IPCC reports and their derivatives. Yet, these were the very reports that had been challenged, so we had gone around in a circle. The Society had not examined the science itself, opting to outsource its assessment to the UN body.

Accordingly, the Society was petitioned to conduct an independent scientific study and assessment of the global warming issue. As of this writing, the Petition for such a study/assessment has gathered 260 signatures, including 90 Fellows and 15 members of national academies. In addition, letters from hundreds of other members demonstrated that a substantial fraction believe that the current APS Statement should be withdrawn, pending an independent study. Such a study would follow the traditions of the past. For example, the Star Wars issue of the 80s, also contentious and fraught with policy implications, was examined by the Society and the results published in *Reviews of Modern Physics*. Members around at the time regard this as one of the Society’s finest hours.

Meanwhile the “ClimateGate” disclosures emerged, followed by the parade of “aftergate” revelations of shoddy practice by the IPCC in its claims of past and projected effects of global warming, plus the revelations of manipulations of temperature data/stations and uncorrected heat island effects that led to large warming biases. Whatever else these disclosures demonstrate, they certainly emphasize the need for the Society to take an independent course to restore public trust in science. To continue to rely on investigations by the agencies that created and tolerated the conditions revealed by these disclosures is not a credible course. And importantly, in rejecting the proposed alternative statement, the ad hoc committee report extensively referenced work by individuals directly implicated by the disclosures.

Unfazed by the disclosures, APS leadership has now produced a draft [Commentary](#) [2] on the 2007 Statement, finally addressing matters of ‘clarity and tone.’ The Commentary is intended to be an appendix or supplement to the 2007 Statement, which is to remain unchanged. That is, the committee recommends that the original 157 word Statement be retained but appended with 827 words of explanation.

Thus, according to the committee, the 2007 Statement needs no revision. It just needs to be explained better. Not only was the 2007 Statement completely valid at its time of issue, there has been no subsequent finding or development that warrants any change whatsoever. Yet, since 2007, we have seen the continuation of the flat global temperature trend, now static for a dozen years or more and punctuating the lack of correlation of global temperature with atmospheric CO<sub>2</sub>; the aforementioned revelations of manipulations of temperature data; the parade of problems with paleoclimate analyses purporting to show exceptional 20<sup>th</sup> century warming; studies of ocean heat content and complexity switching that are at odds with climate models; a variety of empirical studies of natural variations and transient phenomena pointing to a low climate sensitivity to greenhouse gases; the disclosures of public and private doubts by key climate scientists; and more. We are being asked to accept that none of this warrants a single change to the original statement.

And POPA has once again put the APS in the position of speaking to the science without a valid basis for doing so. For its source material, we know only that the APS President thanked a number of IPCC lead authors and other advocates...and a single token “skeptical.” The President also thanked the Chair of POPA, whose research program depends on continued global-warming alarmism. But whereas the Commentary makes numerous statements of a scientific nature, it offers no attribution sources for these statements. If the ultimate source is the IPCC, the APS has continued its practice of outsourcing the science, and to an organization whose scientific neutrality and indeed competence is questioned. If it is the committee’s own assessment, it has no scientific authority or special competence to make that assessment.

Perhaps worse is an important error in scientific logic in the Commentary, as revealed by, “...there have been no credible natural mechanisms proposed to explain all of the observed warming in the past century.” We do not understand natural mechanisms and their impact on climate, and it is not the job of climate science to prove the existence of a large CO2 contribution by showing that it cannot account for past warming by natural effects (therefore, it must have been CO2). Rather it must show direct evidence that greenhouse gases have indeed caused substantial warming. It must do so by making predictions that are verified – or not – by observation. That is the scientific method. In this regard, the models have failed to predict the actual temperature increase ever since the first IPCC report of 1990, and their prediction of a greenhouse fingerprint – the tropical “hot spot” of accelerated warming in the troposphere – is simply not observed.

And there is sleight of hand. The Commentary does a “bait and switch” trick to try to defend the infamous “Evidence is incontrovertible” clause, which is to remain the stated position of the APS. Here is the full passage from the 2007 Statement: “The evidence is incontrovertible: Global warming is occurring. If no mitigating actions are taken, significant disruptions in the Earth's physical and ecological systems, social systems, security and human health are likely to occur.” The trick is to switch the actual passage to the merely trivial “Global Warming *has* occurred,” and then proceed to defend the fact that warming did occur in spurts in the 20<sup>th</sup> century. This is almost as deceptive as “Mike's *Nature* trick;” only this version of “Hide the decline” obscures the fact that global warming *is not* occurring, at least since around 1995. Furthermore, the threatening calls to action in the passage were clearly linked to “The evidence is incontrovertible” and angered many members. The Commentary ignores the full context, evidently to head off the need for any revision of the 2007 statement.

Then APS leadership, after taking a meaningful step toward improved transparency by asking members to comment on the Commentary, refused to publish those comments, anonymously of course. We will have to rely on interpretation and spin from POPA, hardly a neutral and reliable source of information. This obscurantism will prevent us from knowing how fellow members feel about the Statement-plus-Commentary.

I could go on. But readers will get the point. Returning to the theme, “It is not what you do that counts, it is what you do after you do what you do,” unfortunately APS leadership has not capitalized on the opportunities it has been given. Instead it has dodged, weaved, stonewalled, and wasted the opportunities to take the high ground on the fundamental science issue of our time. I don't know how many more opportunities APS leadership will get, but the dreary

history to this point strongly suggests that the next generation of physicists will look back at this time with deep regret and distress for the Society and indeed for physics itself.

Roger W. Cohen, Fellow APS; 03-02-10

#### REFERENCES

[1] Click on “2008\_open\_letter” at <http://www.openletter-globalwarming.info/Site/HOME.html>

[2] Click on “The 2010 APS Request for Comments“ at

<http://www.openletter-globalwarming.info/Site/HOME.html>

**EXECUTIVE COMMITTEE(\*) and Supplementary List**  
**American Physical Society/New England Section**  
**Year 2010**

**\*Chair (2010):**

Peter Parker  
Dept. of Physics,  
Yale University, P.O. Box 208120,  
New Haven, CT 06520-8120  
Ph: 203-432-3099  
email: [peter.parker@yale.edu](mailto:peter.parker@yale.edu)

**\*Vice Chair (2010):**

TBD

**\* Past Chair (2010):**

David Kraft  
Dana Hall  
University of Bridgeport  
Bridgeport, CT 06601  
203- 576-4331 (office)  
203- 576-4262 (fax)  
email: [dkraft@bridgeport.edu](mailto:dkraft@bridgeport.edu)

**\*Secretary/Treasurer (2008-2010):**

Nalini Easwar  
Clark Science Center  
Smith College  
Northampton, MA 01063-1000  
413- 585 3887 (office)  
FAX: 413- 585 3786  
email: [neaswar@smith.edu](mailto:neaswar@smith.edu)

**\*Newsletter Co-Editors (2005- ):** [The Newsletter editor is a non-voting position on the Executive Committee]

Paul H. Carr  
Air Force Research laboratory Emeritus  
Hanscom AFB  
EMAIL: [paul.carr2@comcast.net](mailto:paul.carr2@comcast.net)  
<http://www.MirrorOfNature.org>

Laurence I. Gould  
Physics Department  
University of Hartford  
West Hartford, CT 06117  
860 - 768-4307  
FAX: 860-768-5244  
EMAIL: [lgould@hartford.edu](mailto:lgould@hartford.edu)  
<http://uhaweb.hartford.edu/lgould/>

**\*Members-at-large (2007-2009):**

Winthrop Smith  
Department of Physics  
2152 Hillside Road  
University of Connecticut U-3046  
Storrs, CT 06269-3046  
[winthrop.smith@uconn.edu](mailto:winthrop.smith@uconn.edu)  
Phone 860-486-3573

Matthew Koss  
Department of Physics  
College of Holy Cross  
Worcester, MA 01610  
[mkoss@holycross.edu](mailto:mkoss@holycross.edu)  
Phone 508-793-2406

**\*Members-at-large (2008-2010):**

Jim McClymer  
Department of Physics  
120 Bennett Hall  
University of Maine  
Orono, Maine 04469-5709  
[mccllymer@maine.edu](mailto:mccllymer@maine.edu)  
Phone 207-581-1034

Sean Sutton  
Department of Physics  
219 Kendade Hall  
Mount Holyoke College  
50 College Street  
South Hadley, MA 01075  
[ssutton@mhc.mtholyoke.edu](mailto:ssutton@mhc.mtholyoke.edu)  
Phone 413-538-2817

**\*Members at Large (2009-2011)**

Derek Stein  
Dept. of Physics  
Brown University  
Providence, RI 02912  
Ph: 401-863-2581  
email: [derek\\_stein@brown.edu](mailto:derek_stein@brown.edu)

B. Lee Roberts  
Dept. of Physics  
Boston University  
590 Commonwealth Ave, Boston, MA 02215  
Ph: 617-353-2187  
email: [roberts@bu.edu](mailto:roberts@bu.edu)

**Education Liaison to the APS Committee on Education**

Arthur Mittler  
Department of Physics and Applied Physics  
University of Massachusetts Lowell  
1 University Ave.  
Lowell, MA 01854  
[Arthur\\_Mittler@uml.edu](mailto:Arthur_Mittler@uml.edu)  
Phone: 978-934-3775

Council Observer (2005-)

Edward F. Deveney  
Physics Department  
Bridgewater State College  
Bridgewater, MA 02325  
[edeveney@bridgew.edu](mailto:edeveney@bridgew.edu)

Webmaster

Peter K. Le Maire  
Department of Physics and Earth Sciences  
Central Connecticut State University  
New Britain, CT 06050  
[lemaire@ccsu.edu](mailto:lemaire@ccsu.edu)  
Phone: 860-832-2939  
Fax: 860-832-2946