

## RESPONSE TO CCSP-USP-SYNTHESIS REPORT

NB: The CCSP Unified Synthesis Product (USP) will likely replace the IPCC report as the source for all future debates/court cases/regulations. EPA will rely on this report to justify its endangerment finding. Comments filed on the CCSP USP will provide the basis for comments on the EPA ANPR.

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### Comments on

**"Global Climate Change Impacts in the United States: Unified Synthesis Product Report by the U.S. Climate Change Science Program, First Draft, July 2008"**

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NB: Recommendations are bolded and set off thus **\*\*\*xxx\*\*\***

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### I. Background Information on Commenter

**Name:** S. Fred Singer, Ph.D.

**Organization:** Science & Environmental Policy Project

**Mailing Address:** 1600 S. Eads St., Suite 712-S, Arlington, VA 22202-2907

**Phone:** 703-920-2744

**E-mail:** [singer@sepp.org](mailto:singer@sepp.org)

**Area of Expertise:** Climate Science

### II. General Comments

#### **a. General comment #1: The USP is an advocacy document and lacks any semblance of balance**

The USP is an advocacy document, not an objective assessment. As stated on p.15, it presents the “expert judgment of the author-team based on the best available evidence.” But it seems to be based entirely on the unsupported assumption of human-induced (anthropogenic) global warming, or AGW. The scientific arguments against AGW (for example, as presented in the NIPCC report [2008]) are ignored, even though they are well known to the government. This serious lack of balance makes the USP of little value as a document to support government policy. It fails to meet the legal requirements for an objective scientific assessment.

#### **b. General comment #2: The USP lacks scientific documentation and cannot be taken seriously.**

The USP throughout makes claims/assertions/statements that are unsupported; this is quite improper for a report that aspires to be taken seriously as a scientific document. The USP should at least carry detailed references to published CCSP-SAP reports (only 10 published so far out of 21), to the 2007 IPCC report, or to publications in peer-reviewed journals – with page numbers and full quotes.

#### **c. General comment #3: The draft USP should be rejected.**

In addition to the basic problems listed above, the USP suffers from a conflict of interest. It was prepared by an author-team involved in writing the underlying CCSP reports. As a result we do not have a unified synthesis product but a document that promotes a particular narrow perspective on climate science based on the prejudices of the editors.

**\*\*\*It is recommended that a new USP be prepared by an author-team that includes independent scientific experts.\*\*\***

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### III Detailed Comments and Recommendations (on human contribution to climate change)

These detailed comments relate primarily to the USP claim [p.6] that “human induced climate change and its impacts are apparent now throughout the United States.” This sentence is not known to be true; it is a conjecture at best and should not be stated as a fact. **\*\*\*It should be qualified as a mere possibility or dropped.\*\*\***

This claim is not backed by any solid evidence within the report itself as we will detail below.

#### 1. There is no scientific consensus

USP claims [p.6] that anthropogenic global warming [AGW] is “unequivocal.” This word implies a general scientific consensus. There is no evidence that such a consensus exists.

a. We should note, for the record, that consensus never guarantees scientific truth. Only data and observations can determine whether a scientific hypothesis stands or falls.

b. The idea of a scientific consensus, which has been strongly promoted by former Vice President Al Gore, seems to stem from a study published in Science magazine by Naomi Oreskes [2004], a professor of history of science at the University of California San Diego. The study is based on sloppy research -- as evidenced by the fact that the author was forced to publish a correction [2005] admitting that she had overlooked 90 percent of the published abstracts whose examination led to her claim. In any case, her claim of “consensus” is contradicted by numerous polls of scientists, by declarations and petitions signed by hundreds and even thousands of scientists, and by actual studies of published abstracts. Specifically, we have polls taken by Bray and von Storch, declarations such as the Statement of Atmospheric Scientists [1992], the Heidelberg Appeal [1992], the Leipzig Declaration [1996], and the more recent Oregon Petition, originally by 19,000 scientists and now by more than 31,000 [[www.oism.org](http://www.oism.org)], as well as a reexamination of published papers [Schulte 2008].

c. We note that the National Academy/National Research Council specifically denies that there is “unequivocal” agreement. Their report “Climate Change Science: An Analysis of Some Key Questions” [2001] states that “[b]ecause of the large and still uncertain level of natural variability inherent in the climate record and the uncertainties in the time histories of the various forcing agents (and particularly aerosols), a causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes during the 20th century *cannot be unequivocally established*. The fact that the magnitude of the observed warming is large in comparison to natural variability *as simulated in climate models* is suggestive of such a linkage, but it does not constitute proof of one because the model simulations could be deficient in natural variability on the decadal-to-century time scale” (p. 17) [from Fed Register, pg 52930; emphases added].

#### Conclusion

There is no scientific consensus about the cause of global warming. **\*\*\*Therefore, the term “unequivocal” should be deleted.\*\*\***

#### 2. Melting Ice

The USP mentions that “Arctic sea ice and the large ice-sheets on Greenland and parts of Antarctica are

melting faster than expected.” [p.25]

#### **Conclusion:**

“Faster than expected” simply means that the models used previously were inadequate and thus supports the suspicion that present models are similarly inadequate. In any case, even if the observations are correct, they are largely irrelevant to the main issue since any kind of warming whether natural or anthropogenic will melt ice. **\*\*\*This fact should be clearly stated in the USP.\*\*\***

### **3. The 20th Century is not unusual**

The USP suggests, in a graph on page 19, that the 20th century is in some way unusual and the warmest in the last 1,000 years. This graph, of course, will be recognized as the notorious “hockey-stick” curve, which was featured in the third IPCC Assessment [2001] but has been largely ignored in the latest IPCC report [2007].

a. It is somewhat surprising that the USP author-team would use a discredited graph in their report. It is well accepted that the hockey-stick result, published by Mann, Bradley and Hughes [1999], is simply wrong -- especially after a thorough investigation by the National Research Council and by testimony of statistics expert Prof. Edward Wegman. Its result is based on the misuse of statistical analysis and on the emphasis on a particular group of tree-ring data. McIntyre and McKittrick [2003,2005], who first uncovered some of the problems of the hockey-stick, have shown that even a random set of data inserted into the MBH methodology would create a hockey-stick curve.

b. Available publications using data from various independent sources show a Medieval Warming Period much warmer than the current one. We are referring here to the proxy-data paper by Loehle [2007], the ocean sediment data of Keigwin [1996], and the ice-core data of Dahl-Jensen [1999]. Their graphs are shown in the NIPCC report [2008] as figures 2 and 3. The Medieval Warm Period around 1000 AD is most clearly shown in figures 2b and 3b. As far as we know these results have not been credibly challenged and therefore should be accepted. **\*\*\*The USP should make this fact quite clear.\*\*\***

c. It is possible that the author-team was not aware of the hockey-stick when they decided to use the graph in their USP report. Alternatively, they may have been aware of the current criticism but believe that the hockey-stick is valid. In that case, one would look for an appropriate discussion somewhere in the USP report; but we found none. It is also possible that the author-team was aware of the shortcomings of the hockey-stick but decided to display it anyway in order to convince the reader that human activities had somehow made the 20th century “unusual.” If that is the case, then the author-team should be censured for using deceptive practices.

#### **Conclusion**

Based on the historic record, the 20th century, during which CO<sub>2</sub> levels rose sharply, is in no way unusual from a temperature point of view, indicating that the rise in CO<sub>2</sub> has had little effect. Any use of the hockey-stick graph should be considered as deceptive. **\*\*\*The graph should be deleted from the USP\*\*\***

### **4. Correlation between CO<sub>2</sub> and temperature does not prove AGW**

The hockey-stick graph on page 19 also shows the rapid rise of CO<sub>2</sub> emissions and CO<sub>2</sub> levels. It implies a correlation between CO<sub>2</sub> and temperature. However this is not the case.

a. In general, a correlation does not indicate causation.

b. During the past 100 years there were periods during which temperatures declined while CO<sub>2</sub> levels increased, for example during 1940-75 -- and more recently, since 1998. In other words, there was a negative correlation between temperature and CO<sub>2</sub> – which certainly does not mean that CO<sub>2</sub> would cause a cooling.

c. The Vostok ice-core data show some striking correlations between temperature and CO<sub>2</sub>. However, a closer examination with higher time resolution shows that the temperature increases preceded the CO<sub>2</sub> increase by few centuries. In other words, the temperature increase caused CO<sub>2</sub> to increase, probably by releasing it from a warming ocean [Fischer 1999].

### **Conclusion**

The CO<sub>2</sub> temperature correlation suggested by the graph on page 19 is deceptive in that it would seem to indicate to the unwary reader that the CO<sub>2</sub> increase is responsible for the temperature increase. \*\*\***The graph and associated assertions should be eliminated.**\*\*\*

**5. Climate Sensitivity is much smaller than calculated from models.** Following the IPCC [2001 and 2007], the USP suggests in the top graph on page 26 that the complicated temperature history of the 20th century can be fully explained by models that use both human and natural forcing. We claim that this is an illusion and simply the result of using several adjustable parameters, chosen so that will produce agreement with the observed global average surface temperature.

a. The graph on page 20 shows the estimated magnitude of the various human and natural forcings. While the forcing for long-lived GHG shows only a small uncertainty, in fact the uncertainty is a factor of 3 or larger and corresponds to uncertainty in Climate Sensitivity (CS) [defined as the temperature increase produced by a doubling of GHG forcing]. The IPCC gives values of CS between 1.5 and 4.5 degC. Some models can give lower and higher values, depending primarily on the choice of cloud parameters. In view of the large dispersion among model results, it would be interesting to know exactly which model the USP chose to fit the observations and why. It would be instructive also to redraw the top graph on page 26 to show the result if models with different values of CS were used.

b. Most all models implicitly use a positive feedback from water vapor to achieve their high values of climate sensitivity. Recently, Monckton [2008] and Spencer [2008] have shown that the climate sensitivity is only a small fraction of that quoted by the IPCC, perhaps as low as 0.5 degC or even lower. If that is the case, then the GH effect on climate would be of little significance.

c. As seen from graph on page 20, the forcing effects from aerosols are highly uncertain, by at least 200% for the cloud-reflective effect. Since the aerosol forcing is used in the construction of the top figure on page 26, it would be interesting to know which value of aerosol forcing was chosen and why.

d. We note that under natural forcings the USP considers only total solar irradiance. But TSI is small compared to the likely effects of changes of solar activity that lead to substantial changes in cloudiness [Svensmark 2007, Kirkby 2008, and other references]. Yet the USP, following the IPCC, completely ignores this major climate forcing. The importance of changes in solar activity is persuasively demonstrated in the observed detailed correlation between C-14 and O-18 in stalagmites [Neff 2001; see also figure 14 in NIPCC]. C-14 is produced by cosmic rays and can be taken as a proxy for solar activity, which modulates the intensity of galactic cosmic rays reaching the earth. O-18 is commonly taken as a proxy for temperature.

e. Related to this discussion is the implied USP claim that natural forcings are not only very small but are so well known that any remaining change in temperature can only be explained by human activities. It will be interesting to know how the author-team can explain the lack of warming since 1998, using the same parameters of climate sensitivity that led to the top graph on page 26.

### **Conclusion**

The attempt to reproduce observations by models that use human and natural forcing is simply an exercise in curve fitting and therefore worthless. It certainly does not constitute a validation of the climate models. **\*\*\*We recommend that the top graph on p26 and associated discussion be eliminated – unless the author-team can provide answers to the several questions posed above.\*\*\***

### **6. The “fingerprint” evidence against AGW**

On page 26 USP states “the specific patterns of climate change show that it is primarily human-induced.” This claim is contradicted by the data and graphs in CCSP Report SAP-1.1.

a. The final (fourth) paragraph on page 26 states that climate models incorporating GH gas increases show warming at the surface and in the troposphere but cooling in the stratosphere. This statement is misleading. As clearly shown by the IPCC [2007] and CCSP-SAP 1.1 [2006], GH models show a tropospheric warming that is up to 3 times greater than the surface warming [see figure 1.3F from SAP-1.1, p.25]. But the observational evidence, also displayed in SAP-1.1 [see figure 5.7E p.116], shows the opposite. Instead of increased warming, the data show a slight cooling in the tropical zone. This disagreement between models and observations is shown more clearly in the SAP-1.1, figure 5.4G p.111. A more detailed view of the disparity of the temperature trends is given in the research paper of Douglass et al [2007]. All these figures are reproduced in the NIPCC report [2008] as figures 6, 7, 8, 9 and 10.

b. This disparity clearly implies that GH gases are not responsible of the observed warming of the past 30 years. The climate sensitivity is therefore quite small -- in agreement with Monckton and Spencer. In other words, AGW is insignificant. The cooling of the stratosphere has no bearing on the value of the climate sensitivity and is not in dispute.

*c. There has been no considered response to the NIPCC [2008] claim that AGW is negligible. Statements in blogs and elsewhere that there is some doubt about the quality of the balloon data are contradicted by the fact that the UAH satellite data agree with the balloon data of both NOAA group and Hadley Centre [Douglass et al 2007].*

d. Another response has been that perhaps the uncertainties in the models and observations are so large that there is an overlap -- and therefore no disagreement. This suggestion is far-fetched and belied by an examination of the evidence. However, in the executive summary of SAP 1.1 (though not in the report itself), one finds an attempt to show the uncertainties in models and observations by plotting “range” instead of the usual “Gaussian distribution” [see figure 4G page 13 in SAP 1.1 and also figure 9B in NIPCC]. But the use of “range” is clearly inappropriate for statistic analysis [Douglass et al 2007], since it gives undue weight to “outliers.”

### **Conclusion**

Far from giving support to the claim that GW is human caused, i.e., that AGW is the major cause of warming, the fingerprint method shows the opposite -- namely that the human component is negligibly small. **\*\*\*The USP should state this conclusion clearly – unless the author-team can respond credibly to the several points raised above.\*\*\***

## Overall Comment

The basic purpose of the Unified Synthesis Product is to serve as a basis for future regulatory policies. The crucial issue therefore is to know whether natural factors or human factors are more important in shaping the climate. The IPCC claims to be between 90 to 99 percent certain that human factors, in particular the release of GHG, are responsible for most of the observed climate warming of the 20th century. On the other hand, the NIPCC report “Nature, Not Human Activity, Rules the Climate” [2008] presents an opposing view. Both reports are produced by teams of reputable international scientists; both reports are based on published research papers; both reports have been widely disseminated. The IPCC Report presents no firm evidence to support its conclusion; the CCSP-USP similarly presents no evidence, as discussed above. On the other hand, the NIPCC presents credible evidence against a significant human contribution to the warming observed over the last 30 years, the weather-satellite era. If the NIPCC argument is accepted, then there’s little point to the CCSP-USP report and its conclusions and recommendations.

## Recommendations:

**\*\*\*Our overall recommendation in this Comment is that the Draft CCSP-USP report be rejected. A new independent Synthesis Committee should be appointed in order to present policymakers with an accurate assessment of the diversity of scientifically supported conclusions regarding the role of humans within the climate system. This must include also the evaluation of the vulnerabilities to important environmental and societal resources from both natural and human-caused climate variability and change.\*\*\***

The scientific dispute of NIPCC vs. IPCC must be settled before any credible attempt is made to predict future climate change and its impact on the United States, especially its regional impacts.

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## I. Background Information

**Name:** S. Fred Singer, Ph.D.

**Organization:** Science & Environmental Policy Project

**Mailing Address:** 1600 S. Eads St., Suite 712-S, Arlington, VA 22202-2907

**Phone:** 703-920-2744

**E-mail:** [singer@sepp.org](mailto:singer@sepp.org)

**Area of Expertise:** Climate Science

## II. Sea Level Rise cannot be controlled

Sea level rise is the most feared consequence of a putative future warming. The USP report does not produce any independent analysis of global sea level rise but ventures the opinion that sea level will rise between 2 and 5 feet during the 21st century [page 29]. It says “various methods of estimating future sea level rise suggest increases of 2 to almost 5 feet by the end of this century but even larger numbers cannot be ruled out.”

a. No references are given; no sources are quoted. The values cited are several times greater than those published by the IPCC-2007. We suspect that the 2 to 5 foot figure corresponds to the range of 50-140 cm given in a published paper by Rahmstorf [2007] and that the even larger figure may refer to Hansen’s value of 600 cm [see figure 10 in the NIPCC Report]. Recently, Rahmstorf [2007] has published a ‘top down’ approach to SL-rise prediction that exceeds the current IPCC estimates about threefold. He simply assumes

the rate of rise is proportional to global mean temperature and ignores the negative effects on sea level rise from ice accumulation in Antarctic and Greenland. There is no theoretical basis to support his assumption – and indeed, it is contradicted by observational evidence: SL rise did not accelerate during 1920-1940 when the climate warmed rapidly and continued at the same rate even when the climate was cooling from 1940 to 1975 [Trupin and Wahr 1990; Holgate 2007; see also figure 18 in NIPCC].

Hansen [2006] has suggested even more extreme estimates of future SL rise – nearly 15 or even 60 times the mean IPCC value and 30 or even 120 times that of Singer [1997]. His 20-foot estimate is based on speculation about the short-term fate of polar ice sheets, assuming a sudden collapse and melting; his 80-foot estimate is derived by comparison with previous interglacials. However, the MWP and the much greater warmings during the earlier Holocene showed no evidence of such imagined catastrophes. Hansen and Rahmstorf can therefore be considered “contrarians” on this issue.

### **Conclusion**

Coral and peat data show that sea level has been rising of between 7 and 9 inches per century during past millennia [Toscano and Macintyre 2003, see also figure 17 in NIPCC]. Since this rate of rise has been unaffected by short-term warming or cooling, we may safely assume that it will continue to do so in the future – at least until the next ice age, at which time sea levels will drop. **\*\*\*USP should delete its speculative estimates of future sea-level rise.\*\*\***

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**Name:** S. Fred Singer, Ph.D.

**Organization:** Science & Environmental Policy Project

**Mailing Address:** 1600 S. Eads St., Suite 712-S, Arlington, VA 22202-2907

**Phone:** 703-920-2744

**E-mail:** [singer@sepp.org](mailto:singer@sepp.org)

**Area of Expertise:** Climate Science

**II. Use of Models for Regional Forecasts is Not Appropriate** a. The USP makes regional predictions about temperature and precipitation by using an average of some 15 climate models (as stated on page 36). However, we know that this procedure hides the strong disagreements among individual models and is therefore deceptive. We have for example the experience from the National Assessment report [2000] “Climate Change Impacts on the United States” [available at [www.nacc.usgcrp.gov](http://www.nacc.usgcrp.gov)]. (The NACC report failed the test of the Data Quality Act and was finally considered to be not an official report of the US government.)

It used two climate models of high sensitivity to calculate regional temperatures, soil moisture, and precipitation. The striking disagreement of soil moisture results is shown in a graph by Kerr [2000]. On precipitation, the models again disagree strongly. For the 18 regions of the United States nine regions show opposite results. For example, one model shows North Dakota turning into a swamp, the other shows it turning into a desert – as seen in figure 16 of NIPCC [2008].

b. A separate issue is how the USP constructs its “average model.” We would like to know whether they simply averaged the 15 models (giving each model equal weight) or whether they averaged all of the individual model runs, i.e., an average of some 50 separate runs. There is no discussion about the procedure and no justification is given.

c. USP states on page 23: “Currently rare extreme events become more common.” This statement is not supported by evidence. In addition, it is a matter of simple statistics that as the length of the observation period increases, so must the probability for the occurrence of extreme events -- even if there’s no change in the mean climate. The USP report does not seem to allow for this purely statistical effect.

### **Conclusion**

If climate should warm in the 21st century, then overall global precipitation should increase because of increased evaporation from the ocean. However, current models seem to be incapable of determining the future pattern of precipitation. **\*\*\*The USP should show the regional results from each of the 15 models separately – in order to exhibit the major disagreement among models – all of which is now hidden from the reader by using an “average” value. The author-team should also supply answers to the several questions raised above.\*\*\***

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### **References:**

- CCSP-SAP 1.1. 2006. Temperature trends in the lower atmosphere: Steps for understanding and reconciling differences. Washington, DC
- Dahl-Jensen, D. et al. 1999. Past temperature directly from the Greenland Ice Sheet. *Science* 282: 268-271.
- Douglass, D.H., J.R. Christy, B.D. Pearson, and S.F. Singer. 2007. A comparison of tropical temperature trends with model predictions. *Intl J Climatology (Royal Meteorol Soc)*. DOI:10.1002/joc.1651.
- Fischer, H., et al. 1999. Carbon dioxide in the Vostok ice core. *Science* 283: 1712-1714.
- Hansen, J.E. 2006. The threat to the planet. *New York Review of Books* 53, July 13, 2006.
- Holgate, S.J. 2006. On the decadal rates of sea-level change during the twentieth century. *Geophys Res Lett* 34. DOI: 10.1029/2006GL028492,2007.
- IPCC-TAR 2001. *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- IPCC-AR4 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- Keigwin, L.D. 1996. The Little Ice Age and Medieval Warm Period in the Sargasso Sea. *Science* 274: 1504-1508.
- Kerr, R.A. 2007. Humans and nature duel over the next decade’s climate. *Science* 317: 746-747.
- Kerr, R.A., 2000. Dueling Models: Future US Climate Uncertain. *Science* 288:2113
- Kirkby, J. 2007. Cosmic Rays and Climate. *Surveys in Geophysics* 28, 333–375, doi: 10.1007/s10712-008-9030-6
- Loehle, C., 2007: A 2000-year global temperature reconstruction based on non-tree-ring proxies. *Energy and Environment* 18:1049-1058.



- Mann, M.E., R.S. Bradley and M.K. Hughes. 1999. Northern hemisphere temperatures during the last millennium. *Geophys Res Lett* 26, 759-762
- McIntyre, S. and R. McKittrick 2003. Corrections to Mann et al. (1998) proxy data base and northern hemisphere average temperature series. *Energy & Environment* 14: 751-777.
- McIntyre, S. and R. McKittrick 2005. Hockey sticks, principal components and spurious significance. *Geophysical Research Letters* 32 L03710.
- Monckton of Brenchley, C. 2008. Climate Sensitivity Reconsidered. *Physics and Society* 37, 3:3-6
- National Assessment for Climate Change (NACC) 2000. *Climate Change Impacts on the United States. The Potential Consequences of Climate Variability and Change*. Available at <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/overview.htm>.
- National Academy of Sciences, 2001. "Climate Change Science: An Analysis of Some Key Questions" National Research Council, Washington, DC
- Neff, U., et al. 2001. Strong coherence between solar variability and the monsoon in Oman between 9 and 6 kyr ago. *Nature* 411: 290-293.
- Oreskes, N. 2004. The scientific consensus on climate change. *Science*, 306, 1686, 3 December 2004 (<http://www.sciencemag.org/cgi/content/full/306/5702/1686>). --and Correction. *Science* 307, 355, 2005
- Rahmstorf, S. 2007. A semi-empirical approach to projecting future sea-level rise. *Science* 315: 368-370.
- Schulte, K-M. 2008. Scientific Consensus and Climate Change. *Energy & Envir* 19, 281-286
- Singer, S. F. 1997, 1999. *Hot Talk Cold Science*. The Independent Institute, Oakland CA.
- Singer, S. F. ed. "Nature, Not Human Activity, Rules the Climate: Summary for Policymakers of the Report of the Nongovernmental International Panel on climate Change," Chicago, IL: The Heartland Institute, 2008. Available at [http://www.sepp.org/publications/NIPCC\\_final.pdf](http://www.sepp.org/publications/NIPCC_final.pdf)
- Spencer, R.W. 2008. Climate Sensitivity has been overestimated. Senate EPW Committee testimony. 22 July
- Svensmark, H. 2007. Cosmoclimatology: a new theory emerges. *Astronomy & Geophysics* 48: 1.18-1.24.
- Svensmark, H., et al. 2007: Experimental evidence for the role of ions in particle nucleation under atmospheric conditions. *Proc. Roy. Soc. A* 463: 385-396.
- Toscano, M.A. and I.G. Macintyre 2003. Corrected Western Atlantic Sea Level Curve for last 11,000 years. *Coral Reefs* 22: 257-270.
- Trupin, A. and J. Wahr, 1990. Spectroscopic analysis of global tide gauge sea level data. *Geophysical Journal International* 100: 441-453.
- Wegman, E., D.W. Scott, and Y. Said 2006. Ad Hoc Committee Report to Chairman of the House

Committee on Energy & Commerce and to the Chairman of the House  
sub-committee on Oversight & Investigations on the Hockey-stick Global Climate Reconstructions. US  
House of Representatives, Washington DC.