

# Policy Paper

## Fundamental Climate Science Misunderstanding: Concomitant Harm to Humanity and the Environment

### ABSTRACT

The climate science community (CSC) has misrepresented climate change, falsely claiming carbon dioxide causes global warming, and making computer models of Earth's radiation balance without taking into consideration the tropospheric particulate geoengineering that has been taking place for several decades, thus rendering invalid those models and their interpretations.

The CSC misunderstands the science underlying particulate pollution in the troposphere, typically maintaining that aerosolized particulates cool the Earth.

As described here, pollution particles, including those jet-sprayed into the region where clouds form, reflect some radiation, but also absorb radiation and become heated. The heat is transferred to the surrounding atmosphere, thus increasing its temperature. The increased atmospheric temperature causes loss of heat-transfer efficiency from Earth's surface, and concomitant reduction of Earth's heat loss.

Climate science has been corrupted and coerced by military, commercial, and globalist political agendas. Were the environmentally-devastating geoengineering activities to continue unabated, life on Earth will keep progressing towards the first anthropogenic mass extinction.

The primal right of all human beings is to breathe clean air that has not been deliberately tainted with toxic substances, a right subverted by covert global geoengineering.

Every sovereign nation has the right, and the obligation, to protect the health and welfare of its citizens. The deliberate aerial spraying of pollution particulates constitutes an attack, not only on a nation's citizens, but an attack on the sovereign nation itself, whether that attack originates from treasonous activities within the sovereign nation or from outside. Here I describe five policy proposals, applicable to all sovereign nations, to end geoengineering attacks on citizens.

*Keywords: climate science models, IPCC, greenhouse gases, climate change, global warming, geoengineering, air pollution, geoengineering governance*

### 1. INTRODUCTION

For thirty years, the United Nation's Intergovernmental Panel on Climate Change (IPCC) and the climate science community (CSC) have misrepresented the nature of climate change, also known as global warming [1]. Specifically, it falsely claims that anthropogenic carbon dioxide (CO<sub>2</sub>), via the greenhouse effect, is causing global warming by trapping Earth's heat, that otherwise should be radiated into space [1].

23 There is evidence that scientific objectivity on weather and climate has been corrupted and powerfully influenced by  
24 globalist power politics, military needs, and corporate greed [2]. The highly publicized global warming 'debate'  
25 concentrates on two extreme positions, each strikingly deficient in respect to one crucial, overriding fact.  
26

27 One widely promoted extreme position is that global warming due to anthropogenic carbon dioxide is real and that serious  
28 consideration must be given to a global geoengineering technological fix to 'cool' planet Earth [3]. The other widely  
29 promoted extreme position holds that climate change is a natural phenomenon [4]. Neither, however, is correct. Air  
30 pollution, especially particulate pollution, including tropospheric particulate geoengineering pollution, is the principal cause  
31 of global warming [5].  
32

33 The one commonality of each of the two widely-discussed positions is their systematic failure to mention the ongoing  
34 tropospheric particulate geoengineering that has been taking place with ever-increasing intensity and geographical range,  
35 becoming, since about 2010, a near-daily, near-global activity [6]. The particulate spray-trails (Figure 1) have been  
36 witnessed by, and are of serious concern to, many millions of people [7]. These concerns are justified, as the deliberately  
37 aerosolized particulate pollution is detrimental to the health of virtually all life on Earth [8-16].

UNDER PEER REVIEW



**Figure 1.** Climate manipulation particulate trails, from [6]. (Photographers with permission) Clockwise from upper left: Paris, France (Patrick Roddie); Karnak, Egypt (author JMH); London, England (author IB); Northern California, USA (Patrick Roddie); Geneva, Switzerland (Beatrice Wright); Yosemite, California USA (Patrick Roddie); Jaipur, India (author JMH)

The IPCC and CSC abrogate long-standing principles of science in making assumption-based computer models of Earth's radiation balance without taking the widespread tropospheric, jet-emplaced particulate geoengineering that is visibly-obvious into consideration (Figure 1). Failure to consider ongoing tropospheric geoengineering renders those models and

their interpretations invalid. Concomitantly, ignorance of some of the underlying geophysical science may well lead to global catastrophes, perhaps including the advent of a new ice age.

Neither the IPCC nor the CSC fully understand the science underlying the effects of pollution particulate matter in the atmosphere. They typically maintain that the consequence of aerosolized particulates is to cool the Earth [17-19]. That lack of understanding is evident, for example, in the statement [19]: *“Strong aerosol cooling in the past and present would then imply that future global warming [due to pollution reduction] may proceed at or even above the upper extreme of the range projected by the Intergovernmental Panel on Climate Change.”* Advocacy of aerosolized particulate geoengineering to ‘cool the Earth’ is based upon misunderstood climate science by the climate science community, as described below.

## **2. NATURE AND CONSEQUENCES OF AERIAL PARTICULATE SPRAYING**

Although the specific the compositions and purposes of the ongoing aerial particulate spraying are not publically discussed, they can be deduced from knowledge of the chemical and physical behavior of the aerosolized particulates.

### **2.1 Evidence Consistent with Toxic Coal Fly Ash as the Main Geoengineering Aerosolized Particulate Pollution**

During formation, coal occluded toxic chemical elements from the environment [20]. When coal is burned industrially, about 10% remains as ash, concentrating heavy metals and toxins in the ash. Whereas the heavy ash settles beneath the burner, the light ash, called coal fly ash (CFA), forms by condensing and accumulating, in the hot gases above the burners [21,22]. Coal fly ash, newly formed above the burner, would exit smokestacks, were it not trapped and sequestered, as required by many nations. Coal fly ash is a major waste product [23] that requires little additional processing in order to be used as an ideally sized jet-sprayed aerosol. Its particles form in sizes ranging from 0.01 – 50 microns ( $\mu\text{m}$ ) in diameter [24]. Moreover, CFA’s chemical elements are able to be partially extracted into atmospheric moisture, thus making moisture droplets more electrically conducting and responsive to electromagnetic radiation [25].

Comparing 11 elements analyzed in post-spraying rainwater to corresponding elements measured in laboratory water-extract analyses of this likely aerosol provided scientific forensic evidence that CFA is consistent with the main particulate-pollutant substance being jet-sprayed into the atmosphere [9,26]. Further consistency was demonstrated by comparing CFA elemental analyses to 14 elements measured in air-filter-trapped outdoor aerosol particles [27] and to 23 elements measured in aerosol particles brought down during a snowfall and released upon melting [8,9,16].

Other substances may occasionally be used for specific purposes or added to the CFA, for example, to minimize clumping caused by van der Waals forces. The ubiquitous presence of CFA-extractable elements found in post-spraying rainwater around the world indicates that the main substance sprayed into the regions where clouds form is consistent with CFA. Coal fly ash – inexpensive, widely available, and with useful properties – is thus an ideal geoengineering aerosol, provided you have no concern for human and environmental health [12-16].

### **2.2 Environmental Health Consequences of Tropospheric Particulate Pollution**

Aerosolized CFA sprayed into the region where clouds form, for climate and weather manipulation or other military purposes, mixes with the air we breathe and: (1) puts populations at risk for respiratory disease [14], lung cancer [12], neurodegenerative disease [13] and potentially other health problems [8]; (2) poses a previously unrecognized factor in worldwide forest die-offs [11]; bee and insect die-offs [15]; bird die-offs [16], and (3) contaminates the biosphere with mercury [9], destroys atmospheric ozone that protects us from the sun’s deadly ultraviolet radiation [28], and ultimately may cause untold death and destruction [6,10,27].

### **2.3 Tropospheric Particulate Pollution Inhibits Rainfall**

Aerosol particles, jet-sprayed into the regions where clouds form, are in fact pollution particles. Pollution particles are known to inhibit the fall of rain and snow by effectively keeping droplets and ice-crystals from coalescing to become sufficiently massive to fall to ground [29,30]. Intensive applications of jet-sprayed particulates can thus artificially-induced drought in some areas and concomitant downpours, storms, and flooding in other areas, disrupting natural hydrological cycles and causing climate chaos [6].

### **2.4 Tropospheric Particulate Pollution Heats the Surface and Changes Surface Albedo**

Aerosol particles, jet-sprayed into the atmosphere, are circulated by atmospheric convection and winds, eventually settling to ground where they absorb solar radiation. If they happen to land on ice or snow they change the reflective properties (albedo), causing less light to be reflected and more to be absorbed, thus adding to global warming [31,32].

## 2.5 Tropospheric Particulate Pollution Heats the Atmosphere

Pollution particles, including and especially those sprayed into the region where clouds form, reflect some solar radiation, but they also absorb radiation, become heated, and then transfer that heat to the atmosphere by collisions with atmospheric molecules. Coal fly ash is known to be an efficient radiation absorber [33-35].

According to Hunt [36]: *"A dispersion of small absorbing particles forms an ideal system to collect radiant energy, transform it to heat, and efficiently transfer the heat to a surrounding fluid.... If the characteristic absorption length for light passing through the material comprising the particles is greater than the particle diameter, the entire volume of the particles is active as the absorber. When the particles have absorbed the sunlight and their temperature begins to rise they quickly give up this heat to the surrounding gas...."*

Aerosolized particulate pollution is heated by absorbed radiation. That heat is transferred to the surrounding atmospheric gases which increases their temperature. That temperature increase results in loss of heat-transfer efficiency from Earth's surface, and concomitant reduction of Earth's heat loss as described below.

## 3. REDUCTION OF EARTH'S SURFACE HEAT LOSS

Generally, heat is transported by conduction, convection, and radiation. Each of these modes of heat transport is operant in removing heat from Earth's surface. Specifically, heat loss from Earth's surface occurs via (1) conduction of energy through the interactions of atoms and molecules; (2) mass-transport of energy by massive atmospheric convection; and (3) infrared radiation from the surface. Additional heat removal results from phase changes, namely, the latent heat required to melt ice and to evaporate water. The near-daily, near-global geoengineering emplacement of particulates reduces heat loss from Earth's surface by several mechanisms.

### 3.1 Reduction of Surface Heat Loss Caused by Reduced Atmospheric Heat Transfer by Convection

Of the three principal modes of heat transfer, thermal convection has been misunderstood by both the IPCC and CSC, and by the geophysics community (in other contexts).

Chandrasekhar described convection in the following, easy-to-understand way [37]: *The simplest example of thermally induced convection arises when a horizontal layer of fluid is heated from below and an adverse temperature gradient is maintained. The adjective 'adverse' is used to qualify the prevailing temperature gradient, since, on account of thermal expansion, the fluid at the bottom becomes lighter than the fluid at the top; and this is a top-heavy arrangement which is potentially unstable. Under these circumstances the fluid will try to redistribute itself to redress this weakness in its arrangement. This is how thermal convection originates: It represents the efforts of the fluid to restore to itself some degree of stability.*

In 1939, Elsasser initiated a series of publications proposing that the geomagnetic field is derived from convection-driven dynamo action in the Earth's fluid core [38-40]. Ever since, numerous computer models of convection in the Earth's fluid core have been produced, indicating that many in the geoscience community believe in Elsasser's Earth-core convection-dynamo hypothesis 80 years later [41-43].

Sustained convection in Earth's fluid core is impossible [44], however, and demands demanding a different site for the convection-driven dynamo origin of the geomagnetic field to work [45-48]. Why impossible? One of the reasons is that sustained convection requires a sustained adverse temperature gradient. The core-top must be continually kept cooler than the core-bottom [44]. Heat transported from the core-bottom by mass-flow must be efficiently removed from the core-top, to maintain the adverse temperature gradient, but that is not possible because the core is surrounded by a thermally insulating blanket, Earth's silicate mantle.

The concept of adverse temperature gradient and its effect on convection efficiency is important to understand, and easy to visualize by classroom demonstration [49], but it is difficult to quantify explicitly for the troposphere. If a system is capable of convection, the convection efficiency (heat transport efficiency) decreases with reduction of the adverse temperature gradient. Heating the upper convective-regions of the atmosphere, via pollution-aerosol radiation absorption,



decreases the adverse temperature gradient, and, concomitantly, *leads to reduced convective heat transport from Earth's surface.*

To reiterate: Particulate matter in the convecting portion of the atmosphere not only blocks sunlight, it also absorbs radiation both from in-coming solar radiation and from out-going terrestrial radiation, heats the atmosphere, and concomitantly reduces convective heat transport from the surface. The IPCC and CSC seem to be unaware of the geophysical-behavior differences of particulate matter placed (1) into the stratosphere where convection does not take place, and (2) into the troposphere where atmospheric convection takes place and where atmospheric heating reduces the efficiency of convective heat transfer from Earth's surface.

### **3.2 Other Potential Reductions of Earth's Surface Heat Loss by Tropospheric Particulate Geoengineering**

In addition to tropospheric aerosolized particulate matter reducing the adverse temperature gradient, which then diminishes convective heat transfer efficiency, there are, as one might expect for this complex thermal system, other potential ways in which particulate matter, jet-sprayed into the region where clouds form, might lead to reductions in Earth's surface heat loss. Briefly described below, these should be further investigated.

As noted in Section 2.3, one principal consequence of aerosolized pollution is prevention of rainfall and snow by effectively keeping droplets and ice-crystals from coalescing to become sufficiently massive to fall to ground [29,30], causing artificial, but very real drought conditions [6,27]. Eventually, the geoengineered-clouds become overburdened with moisture and discharge their moisture in downpours, torrents, and storms, typically separated geographically from the regions of geoengineered drought.

For several years, for example, California has been subjected to artificial drought conditions by near-daily tropospheric jet-sprayed particulates, while downpours and floods have occurred in the Midwest and Eastern United States [10]. Although difficult to quantify, it is reasonable to assume that natural, frequent, widely-spread precipitation will have greater proclivity for latent-heat phase changes than the fewer, heavy downpours and storms resulting from atmospheric particulate-geoengineering.

Aerosolized coal fly ash tropospheric geoengineering not only causes drought, which damages and desiccates forests and plant-life, but the moisture-extracted CFA toxins, especially aluminum in a chemically mobile form, weaken trees and aid in their demise [10]. One consequence of forest die-offs is the reduction of transpired water, which thus reduces the latent-heat phase changes that serve to reduce Earth's surface heat loss.

As noted previously [1], the IPCC and CSC recognize that clouds block incoming solar radiation, but underestimate the role of clouds in retaining Earth's heat that should otherwise be radiated into space [50-53]. The possibility should be considered that additional cloud formation caused by aerosolized particulates or overt actions to inject massive quantities of water into the atmosphere may lead to further reductions of Earth's surface heat loss.

## **4. GEOSCIENCE PAWNS IN POLITICAL MALFEASANCE**

As described here and previously reported [1], the IPCC evaluations and conclusions are without merit [54]. Since its inception the IPCC has promoted the idea of 'future' geoengineering to compensate for alleged CO<sub>2</sub> global warming [54]. A massive media campaign was launched to convince citizens of the alleged CO<sub>2</sub> global warming planetary threat [55,56]. Then, without public comment, without informed consent, and buttressed by misinformation [57-60], militaries and their contractors from around the world began to jet-spray particulate matter into the region where clouds form [6] on a near-daily, near-global basis, presumably through secret agreement(s). Simultaneously, concerted efforts were initiated to encourage 'governance' to legalize geoengineering so that non-military organizations might participate in geoengineering activities as well [61,62].

Actual and proposed geoengineering have no sound scientific substance: Air pollution, especially particulate pollution, is our planet's real enemy, not carbon dioxide [1,5]. The intense, widespread tropospheric geoengineering activity is not only causing and exacerbating global warming through mechanisms described here, but is wreaking human and environmental destruction on a planetary scale [5,6,8-16,26-28,63].

The apparently well-coordinated, continuous media-blitz, public misinformation, military co-opting, etc. is indicative of politically-based direction and motivation. Geoscientists worldwide and the institutions they serve have become pawns in providing pseudo-scientific justification for political operations whose consequences represent a massive assault on humanity and on the planetary environment. There is historical precedent: German laws in the 1930s, under which Nazi

crimes against humanity were perpetrated, were enacted based upon pseudo-scientific justification by physicians and scientists [64].

## 5. CAN IT BE BETTER? CAN IT BE WORSE?

Particle lifetimes in the troposphere are short, days to weeks [65,66]. If all of the tropospheric geoengineering were halted, and if all particulate pollution activities were likewise halted, including the massive commercial jet traffic that exacerbates global warming [67], our planet's surface would almost immediately begin to approach its natural state of thermal equilibrium; days would be sunnier, but nights would cool off more quickly, restoring temperature equilibrium. Ocean cooling and biota re-establishment, however, might take years or decades.

But if the geoengineering activities driven by political actors supported by IPCC pseudoscience, and put into practice by militaries and their contractors, continue unabated, life on Earth will progress towards the first anthropogenic mass extinction [6]. In desperation, were those entities to decide to put highly reflective matter high into the stratosphere, where convection does not take place and particles' airborne lifetimes are measured in years, such a geoengineering scheme may radically cool Earth and usher in a new ice age. Earth's first anthropogenically caused ice age.

## 6. POLICY PROPOSALS

The primal right of all human beings is to breathe clean air, air that has not been deliberately tainted with toxic substances. That right has been systematically, covertly, and deceitfully violated internationally on a scale that threatens all human and environmental health. The purported basis for geoengineering (global warming caused by anthropogenic carbon dioxide) is a hoax, justified on the basis of sham climate science [1,5,6]. Ongoing, near-daily, near-global geoengineering, involving aerial spraying of pollutant particles into the region where clouds form, does not counteract global warming. Instead it causes and exacerbates global warming.

Adverse health consequences of particulate air pollution are staggering. We know from epidemiological studies that air pollution particulates (approximately the same size-range as the aerosolized geoengineering particulates) are associated with: Alzheimer's disease [68,69], lung cancer [70], risk for stroke [71], risk for cardiovascular disease [72], lung inflammation and diabetes [73], reduced renal function in older males [74], morbidity and premature mortality [75-77], cognitive decline in older women [78], decreased male fertility [79], low birth weight [80], onset of asthma [81], and increased hospital admissions [82]. Additionally, as noted above, aerosolized coal fly ash, used as geoengineering pollution particulates, puts populations at risk for respiratory disease [14], lung cancer [12], neurodegenerative disease [13] and potentially cause serious environmental health problems [9,11,15,16,28].

Recently, the Director General of the World Health Organization warned of the dangers of air pollution, saying the simple act of breathing is killing 7 million people a year and harming billions more [83]. Those numbers will certainly escalate if covert geoengineering continues.

Every sovereign nation has the right and the obligation to protect the health and welfare of its citizens. The deliberate aerial spraying of pollution particulates constitutes an attack, not only on a nation's citizens, but an attack on the sovereign nation itself, whether that attack originates from treasonous activities within the sovereign nation or from outside it. I propose the following policies that are applicable to all sovereign nations.

- **Order immediate cessation without exception of any and all activities that deliberately place pollutant substances into the atmosphere.**
- **Order full and complete declassification, without redaction, of any and all documents pertaining to atmospheric modification, and make these documents readily available to citizenry so as to facilitate potential criminal prosecutions and civil litigation.**
- **Recognize that in matters of protecting sovereign nations' citizenry, national sovereignty supersedes multi-national alliances, such as the British Commonwealth, the European Union, the North Atlantic Treaty Organization, and the United Nations, to name a few.**
- **Enact sanctions against any and all sovereign nations and multi-national alliances that continue or begin to deliberately place pollutant substances into the atmosphere as atmospheric mobility does not recognize political boundaries.**
- **Enact legislation to prevent atmospheric modification in the future.**

## 7. Conclusions

For thirty years, the climate science community (CSC) has misrepresented the nature of climate change, falsely claiming that carbon dioxide is causing global warming by trapping Earth's heat that should otherwise be radiated into space. The CSC has abrogated long-standing principles of science by making assumption-based computer models of Earth's radiation balance without considering the consequences of tropospheric particulate geoengineering that has been taking place with ever-increasing intensity and geographic scope for decades, thus rendering those models and their interpretations invalid.

The CSC misunderstands the science underlying particulate pollution in the troposphere, typically maintaining that aerosolized particulates cool the Earth when quite the opposite is the case.

As described here, pollution particles, including those jet-sprayed into the region where clouds form, reflect some radiation, but also absorb radiation and become heated. The heat is transferred to the surrounding atmosphere, thus increasing its temperature. The increased atmospheric temperature causes loss of heat-transfer efficiency from Earth's surface, and concomitant reduction of Earth's heat loss.

Climate science has been corrupted by military, commercial, and globalist political agendas. If the environmentally-devastating geoengineering activities, driven by CSC pseudoscience, and put into practice by militaries and their contractors, were to continue unabated, life on Earth will keep progressing towards the first anthropogenic mass extinction.

The primal right of all human beings is to breathe clean air, air that has not been deliberately tainted with toxic substances, a right subverted globally by covert geoengineering.

Every sovereign nation has the right and the obligation to protect the health and welfare of its citizens. The deliberate aerial spraying of pollution particulates, I submit, constitutes an attack, not only on its citizens, but an attack on the sovereign nation as well, whether that attack originates from treasonous activities within the sovereign nation or from outside entities. Here I describe five policy proposals, applicable to all sovereign nations, to end forever geoengineering attacks on citizenry.

## REFERENCES

1. Herndon JM. Science misrepresentation and the climate-science cartel. Journal of Geography, Environment and Earth Science International. 2018;accepted for publication.
2. [http://www.nuclearplanet.com/Evidence\\_of\\_Undisclosed\\_Global\\_Geoengineering.html](http://www.nuclearplanet.com/Evidence_of_Undisclosed_Global_Geoengineering.html) Accessed December 5, 2018.
3. Victor DG, Morgan MG, Apt F, Steinbruner J. The Geoengineering Option-A Last Resort against Global Warming. Foreign Aff. 2009;88:64.
4. Tranter B, Booth K. Scepticism in a changing climate: a cross-national study. Global Environmental Change. 2015;33:154-64.
5. Herndon JM. Air Pollution, Not Greenhouse Gases: The Principal Cause of Global Warming. J Geog Environ Earth Sci Intern. 2018;17(2):1-8.
6. Herndon JM, Whiteside M, Baldwin I. Fifty Years after "How to Wreck the Environment": Anthropogenic Extinction of Life on Earth. J Geog Environ Earth Sci Intern. 2018;16(3):1-15.
7. <http://www.nuclearplanet.com/websites.pdf> Accessed December 5, 2018.
8. Herndon JM, Whiteside M. Further evidence of coal fly ash utilization in tropospheric geoengineering: Implications on human and environmental health. J Geog Environ Earth Sci Intern. 2017;9(1):1-8.
9. Herndon JM, Whiteside M. Contamination of the biosphere with mercury: Another potential consequence of on-going climate manipulation using aerosolized coal fly ash J Geog Environ Earth Sci Intern. 2017;13(1):1-11.



10. Herndon JM, Whiteside M. California wildfires: Role of undisclosed atmospheric manipulation and geoengineering. *J Geog Environ Earth Sci Intn*. 2018;17(3):1-18.
11. Herndon JM, Williams DD, Whiteside M. Previously unrecognized primary factors in the demise of endangered torrey pines: A microcosm of global forest die-offs. *J Geog Environ Earth Sci Intn* 2018;16(4):1-14.
12. Whiteside M, Herndon JM. Coal fly ash aerosol: Risk factor for lung cancer. *Journal of Advances in Medicine and Medical Research*. 2018;25(4):1-10.
13. Whiteside M, Herndon JM. Aerosolized coal fly ash: Risk factor for neurodegenerative disease. *Journal of Advances in Medicine and Medical Research*. 2018;25(10):1-11.
14. Whiteside M, Herndon JM. Aerosolized coal fly ash: Risk factor for COPD and respiratory disease. *Journal of Advances in Medicine and Medical Research*. 2018;26(7):1-13.
15. Whiteside M, Herndon JM. Previously unacknowledged potential factors in catastrophic bee and insect die-off arising from coal fly ash geoengineering *Asian J Biol*. 2018;6(4):1-13.
16. Whiteside M, Herndon JM. Aerosolized coal fly ash: A previously unrecognized primary factor in the catastrophic global demise of bird populations and species. *Asian J Biol*. 2018;6(4):1-13.
17. Letcher TM. Why do we have global warming? *Managing Global Warming*: Elsevier; 2019. p. 3-15.
18. Summerhayes CP, Zalasiewicz J. Global warming and the Anthropocene. *Geology Today*. 2018;34(5):194-200.
19. Andreae MO, Jones CD, Cox PM. Strong present-day aerosol cooling implies a hot future. *Nature*. 2005;435(7046):1187.
20. Gluskoter HJ. Trace elements in coal: occurrence and distribution. *Illinois State Geological Survey Circular no 499*. 1977.
21. Berkowitz N. *An introduction to coal technology*: Elsevier; 2012.
22. Chen Y, Shah N, Huggins F, Huffman G, Dozier A. Characterization of ultrafine coal fly ash particles by energy filtered TEM. *Journal of Microscopy*. 2005;217(3):225-34.
23. Montes-Hernandez G, Perez-Lopez R, Renard F, Nieto J, Charlet L. Mineral sequestration of CO<sub>2</sub> by aqueous carbonation of coal combustion fly-ash. *Journal of Hazardous Materials*. 2009;161(2):1347-54.
24. Zhuang Y, Kim YJ, Lee TG, Biswas P. Experimental and theoretical studies of ultra-fine particle behavior in electrostatic precipitators. *Journal of Electrostatics*. 2000;48(3):245-60.
25. Moreno N, Querol X, Andrés JM, Stanton K, Towler M, Nugteren H, et al. Physico-chemical characteristics of European pulverized coal combustion fly ashes. *Fuel*. 2005;84:1351-63.
26. Herndon JM. Aluminum poisoning of humanity and Earth's biota by clandestine geoengineering activity: implications for India. *Curr Sci*. 2015;108(12):2173-7.
27. Herndon JM. Adverse agricultural consequences of weather modification. *AGRIVITA Journal of agricultural science*. 2016;38(3):213-21.
28. Herndon JM, Hoisington RD, Whiteside M. Deadly ultraviolet UV-C and UV-B penetration to Earth's surface: Human and environmental health implications. *J Geog Environ Earth Sci Intn*. 2018;14(2):1-11.
29. <http://svs.gsfc.nasa.gov/cgi-bin/details.cgi?aid=20010> Accessed December 5, 2018.
30. Rosenfeld D. Suppression of rain and snow by urban and industrial air pollution. *Science*. 2000;287(5459):1793-6.

31. Qian Y, Yasunari TJ, Doherty SJ, Flanner MG, Lau WK, Ming J, et al. Light-absorbing particles in snow and ice: Measurement and modeling of climatic and hydrological impact. *Advances in Atmospheric Sciences*. 2015;32(1):64-91.
32. Hansen J, Nazarenko L. Soot climate forcing via snow and ice albedos. *Proceedings of the National Academy of Sciences*. 2004;101(2):423-8.
33. Moteki N, Adachi K, Ohata S, Yoshida A, Harigaya T, Koike M, et al. Anthropogenic iron oxide aerosols enhance atmospheric heating. *Nature communications*. 2017;8:15329.
34. Stier P, Seinfeld JH, Kinne S, Boucher O. Aerosol absorption and radiative forcing. *Atmospheric Chemistry and Physics*. 2007;7(19):5237-61.
35. Ito A, Lin G, Penner JE. Radiative forcing by light-absorbing aerosols of pyrogenetic iron oxides. *Scientific Reports*. 2018;8(1):7347.
36. Hunt AJ. Small particle heat exchangers. University of California, Berkeley Report No. LBL-7841. 1978.
37. Chandrasekhar S. Thermal Convection. *Proc Amer Acad Arts Sci*. 1957;86(4):323-39.
38. Elsasser WM. On the origin of the Earth's magnetic field. *Phys Rev*. 1939;55:489-98.
39. Elsasser WM. Induction effects in terrestrial magnetism. *Phys Rev*. 1946;69:106-16.
40. Elsasser WM. The Earth's interior and geomagnetism. *Revs Mod Phys*. 1950;22:1-35.
41. Roberts PH, King EM. On the genesis of the Earth's magnetism. *Reports on Progress in Physics*. 2013;76(9):096801.
42. Huguet L, Amit H, Alboussière T. Geomagnetic dipole changes and upwelling/downwelling at the top of the Earth's core. *Frontiers in Earth Science*. 2018;6:170.
43. Glatzmaier GA. Geodynamo simulations - How realistic are they? *Ann RevEarth Planet Sci*. 2002;30:237-57.
44. Herndon JM. Geodynamic Basis of Heat Transport in the Earth. *Curr Sci*. 2011;101(11):1440-50.
45. Herndon JM. Nuclear georeactor generation of the earth's geomagnetic field. *Curr Sci*. 2007;93(11):1485-7.
46. Herndon JM. Nature of planetary matter and magnetic field generation in the solar system. *Curr Sci*. 2009;96(8):1033-9.
47. Herndon JM. Uniqueness of Herndon's Georeactor: Energy Source and Production Mechanism for Earth's Magnetic Field. *arXiv: 09014509*. 2009.
48. Herndon JM. Terracentric nuclear fission georeactor: background, basis, feasibility, structure, evidence and geophysical implications. *Curr Sci*. 2014;106(4):528-41.
49. <https://www.youtube.com/watch?v=O-V3yR2RZUE> Accessed December 5, 2018.
50. Pan Z, Mao F, Gong W, Min Q, Wang W. The warming of Tibetan Plateau enhanced by 3D variation of low-level clouds during daytime. *Remote Sensing of Environment*. 2017;198:363-8.
51. Duan A, Wu G. Change of cloud amount and the climate warming on the Tibetan Plateau. *Geophysical Research Letters*. 2006;33(22).
52. Stephens GL. Cloud feedbacks in the climate system: A critical review. *Journal of Climate*. 2005;18(2):237-73.
53. Dai A, Trenberth KE, Karl TR. Effects of clouds, soil moisture, precipitation, and water vapor on diurnal temperature range. *Journal of Climate*. 1999;12(8):2451-73.
54. <http://www.ipcc.ch/report/ar5/> Accessed December 5, 2018.

55. Feldman L, Myers TA, Hmielowski JD, Leiserowitz A. The mutual reinforcement of media selectivity and effects: Testing the reinforcing spirals framework in the context of global warming. *Journal of Communication*. 2014;64(4):590-611.
56. Bolin JL, Hamilton LC. The News You Choose: news media preferences amplify views on climate change. *Environmental Politics*. 2018;27(3):455-76.
57. [http://www.nuclearplanet.com/public\\_rejection.pdf](http://www.nuclearplanet.com/public_rejection.pdf) Accessed December 5, 2018.
58. [http://www.nuclearplanet.com/Public\\_Deception\\_by\\_Scientists.html](http://www.nuclearplanet.com/Public_Deception_by_Scientists.html) Accessed December 5, 2018.
59. <http://www.nuclearplanet.com/explainretractions.pdf> Accessed December 5, 2018.
60. <http://www.nuclearplanet.com/American%20Science%20Decline.html> Accessed December 5, 2018.
61. Lin AC. International legal regimes and principles relevant to geoengineering. *Climate Change Geoengineering: Philosophical Perspectives, Legal Issues, and Governance Frameworks*: Cambridge University Press; 2010.
62. Virgoe J. International governance of a possible geoengineering intervention to combat climate change. *Climatic Change*. 2009;95(1-2):103-19.
63. Herndon JM. Evidence of variable Earth-heat production, global non-anthropogenic climate change, and geoengineered global warming and polar melting. *J Geog Environ Earth Sci Intn*. 2017;10(1):16.
64. Friedlander H. *The Origins of Nazi Genocide: From Euthanasia to the Final Solution*. Chapel Hill, North Carolina, USA: University of North Carolina Press; 1995.
65. Liu D-Y, Rutherford D, Kinsey M, Prather KA. Real-time monitoring of pyrotechnically derived aerosol particles in the troposphere. *Analytical chemistry*. 1997;69(10):1808-14.
66. Williams J, Reus Md, Krejci R, Fischer H, Ström J. Application of the variability-size relationship to atmospheric aerosol studies: estimating aerosol lifetimes and ages. *Atmospheric Chemistry and Physics*. 2002;2(2):133-45.
67. Burkhardt U, Kärcher B. Global radiative forcing from contrail cirrus. *Nature Climate Change*. 2011;1(1):54.
68. Calderon-Garciduenas L, Franko-Lira M, Mora-Tiscareno A, Medina-Cortina H, Torres-Jardon R, al. e. Early Alzheimer'd and Parkinson's diese pathology in urban children: Friend verses foe response - it's time to face the evidence. *BioMed Research International*. 2013;32:650-8.
69. Moulton PV, Yang W. Air pollution, oxidative stress, and Alzheimer's disease. *Journal of Environmental and Public Health*. 2012;109(8):1004-11.
70. Beeson WL, Abbey DE, Knutsen SF. Long-term concentrations of ambient air pollutants and incident lung cancer in California adults: Results from the AHSMOG Study. *Environ Health Perspect*. 1998;106(12):813-22.
71. Hong YC, Lee JT, Kim H, Kwon HJ. Air pollution: A new risk factor in ischemic stroke mortality. *Stroke*. 2002;33:2165-9.
72. Haberzetti P, Lee J, Duggineni D, McCracken J, Bolanowski D, O'Toole TE, et al. Exposure to ambient air fine particulate matter prevents VEGF-induced mobilization of endothelial progenitor cells from bone matter. *Environ Health Perspect*. 2012;120(6):848-56.
73. Potera C. Toxicity beyond the lung: Connecting PM2.5, inflammation, and diabetes. *Environ Health Perspect*. 2014;122(1):A29.
74. Mehta AJ, Zanobetti A, Bind M-A, C., Kloog I, Koutrakis P, Sparrow D, et al. Long-term exposure to ambient fine particulate matter and renal function in older men: The VA Normative Aging Study. *Environ Health Perspect*. 2016;124(9):1353-60.

75. Dai L, Zanobetti A, Koutrakis P, Schwartz JD. Associations of fine particulate matter species with mortality in the United States: A multicity time-series analysis. *Environ Health Perspect.* 2014;122(8):837-42.
76. Dockery DW, Pope CAI, Xu XP, Spengler JD, Ware JH, et al. An association between air pollution and mortality in six U. S. cities. *N Eng J Med.* 1993;329:1753-9.
77. Pope CAI, Ezzati M, Dockery DW. Fine-particulate air pollution and life expectancy in the United States. *N Eng J Med.* 2009;360:376-86.
78. Weuve J, Puett RC, Schwartz J, Yanosky JD, Laden F, Grodstein F. Exposure to particulate air pollution and cognitive decline in older women. *Archives of internal medicine.* 2012;172(3):219-27.
79. Pires A, de Melo EN, Mauad T, Saldiva PHN, Bueno HMdS. Pre- and postnatal exposure to ambient levels of urban particulate matter (PM<sub>2.5</sub>) affects mice spermatogenesis. *Inhalation Toxicology: International Forum for Respiratory Research*: DOI: 103109/089583782011563508. 2011;23(4).
80. Ebisu K, Bell ML. Airborne PM<sub>2.5</sub> chemical components and low birth weight in the northeastern and mid-atlantic regions of the United States. *Environ Health Perspect.* 2012;120(12):1746-52.
81. Tetreault L-F, Doucet M, Gamache P, Fournier M, Brand A, Kosatsky T, et al. Childhood exposure to ambient air pollutants and the onset of asthma: An administrative cohort study in Quebec. *Environ Health Perspect.* 2016;124(8):1276.
82. Bell ML, Ebisu K, Leaderer BP, Gent JF, Lee HJ, Koutrakis P, et al. Associations of PM<sub>2.5</sub> constituents and sources with hospital admissions: Analysis of four counties in Connecticut and Massachusetts (USA). *Environ Health Perspect.* 2014;122(2):138-44.
83. Carrington D, Taylor M. Air pollution is the 'new tobacco', warns WHO head. *The Gaurdian.* 27 October 2018.