

GEOENGINEERING RESEARCH DOCUMENTS

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THE LEADERSHIP OF RHODE ISLAND SENATOR CLAIBORNE PELL

1/1 Prohibition of Geophysical Modification Activity as a Weapon of War: CLAIBORNE PELL Congressional Record July 20, 1972 Source: CIA Archive
<https://www.cia.gov/library/readingroom/docs/CIA-RDP74B00415R000100110006-9.pdf>

1/2 The Need for an International Agreement Prohibiting the Use of Environmental and Geophysical Modification as a Weapon of War Committee on Foreign Relations United States Congress 1974 and **BRIEFING ON DEPARTMENT OF DEFENSE WEATHER MODIFICATION ACTIVITY** January 25 and March 20, 1974 TOP SECRET made public on May 19, 1974 Senator **CLAIBORNE PELL** source: <https://www.vietnam.ttu.edu/star/images/239/2390601002A.pdf>

1/3 Environmental Modification: Senator CLAIBORNE PELL Congressional Record February 6, 1976 Source: CIA Archive <https://www.cia.gov/library/readingroom/docs/CIA-RDP79M00467A000400020041-1.pdf>

FEDERAL GOVERNMENT DOCUMENTS

1/4 The Federal Weather Enterprise: Fiscal Year 2019 Budget and Coordination Report - Federal Coordinator for Meteorological Services and Supporting Research

Source: www.OFCM.gov

https://www.ofcm.gov/publications/fedrep/2019_fedrep.pdf

1/5 The Federal Weather Enterprise: Fiscal Year 2018 Budget and Coordination Report

Source: https://www.ofcm.gov/publications/fedrep/2018_fedrep.pdf

1/6 Department of Commerce Budget FY2018

The 2018 Budget funds NOAA's programs and activities within the Operations, Research, and Facilities account at approximately **\$3.0 billion.**" Page 191 Source: <https://www.gpo.gov/fdsys/pkg/BUDGET-2018-APP/pdf/BUDGET-2018-APP-1-6.pdf>

1/7 H.R. 353 Weather Researching and Forecasting Innovation Act of 2017

Source: <https://www.congress.gov/bill/115th-congress/house-bill/353>

1/8 H.R. 4586 Geoengineering Research Evaluation Act of 2017

Source: <https://www.congress.gov/115/bills/hr4586/BILLS-115hr4586ih.pdf>

Ac-

tions: <https://www.congress.gov/bill/115th-congress/house-bill/4586/all-actions?overview=closed#tabs>

1/9 FUNDING OPPORTUNITY: U. S. Department of Energy Office of Science Office of Biological and Environmental Research Atmospheric System Research (ASR) Funding Opportunity Number: DE FOA-0001845

https://science.energy.gov/~media/grants/pdf/foas/2018/SC_FOA_0001845.pdf

1/10 DEPARTMENT OF DEFENSE WEATHER PROGRAMS Air Force Weather Mission Statement Source: Internet Archive Wayback Machine <http://www.ofcm.noaa.gov/fedplan/fp-fy10/pdf/3Sec3c-DOD.pdf> (SCRUBBED - reports of three captures 10 Sep 2016 - 2 Feb 2017)

Currently available at : http://agriculturedefensecoalition.org/sites/default/files/pdfs/5P_U.S._Air_Force_Document_Weather_Modification_Programs_sec3b_dod.pdf

1/11 H.R. 2413 Weather Forecasting Improvement Act of 2014

113th Congress (2013-2014) Source: <https://www.congress.gov/bill/113th-congress/house-bill/2413>

1/12 Arctic Research Plan: FY2013 - 2017 Interagency Arctic Research Policy Committee (IARPC) May 2012 Source: https://www.arcus.org/files/page/documents/1776/arc_res_5yr_plan_draft.pdf

1/13 TECHNOLOGY ASSESSMENT Climate Engineering - Technical Status, Future Directions, and Potential Responses. July 2011 GOA report to Congressional Requester , September 1998. Source: <https://www.gao.gov/new.items/d1171.pdf>

1/14 GAO TESTIMONY Before the Committee on science and Technology, House of Representatives. CLIMATE CHANGE Preliminary Observations on Geoengineering Science, Federal Efforts, and Governance Issues. Statement of Frank Rusco, Director of Natural Resources and Environment. March 18, 2010. Source: <https://www.gao.gov/new.items/d10546t.pdf>

1/15 U.S. HOUSE OF REPRESENTATIVES Engineering the Climate: Research Needs and Strategies for International Coordination Report by Bart Gordon Committee on Science and Technology. October 2010 Source: <https://science.house.gov/sites/democrats.science.house.gov/files/10-29%20Chairman%20Gordon%20Climate%20Engineering%20report%20-%20FINAL.pdf>

2/16 S.601 - Weather Mitigation Research and Development Policy Authorization Act of 2009 Senate Report of The Committee on Commerce, Science, and Transportation 111th Congress (2009-2010) Source: <https://www.congress.gov/bill/111th-congress/senate-bill/601>

2/17 AVIATION AND CLIMATE CHANGE Report to Congressional Committees United States Government Accountability Office January 2009 <https://www.gao.gov/new.items/d09554.pdf>

2/18 NOAA Spreadsheets Listing Ongoing Weather Modification Programs in the United States (2004-2011) Source: [450WV 2011 NOAA Interim Listing of Weather Modification Programs Spreadsheet 11WXMOD5 as of July 7, 2011.pdf](#) , [450WV 2010 NOAA Final Listing of Weather Modification Programs Spreadsheet 10WXMOD5.pdf](#) , [450WV 2009 NOAA Final Listing of Weather Modification Programs Spreadsheet 09WXMOD5.pdf](#) , [450WV 2008 NOAA Final Listing of Weather Modification Programs Spreadsheet 08WXMOD5.pdf](#) , [450VW 2006 NOAA Final Listing of Weather Modification Programs Spreadsheet 06WXMOD5.pdf](#) , [450VW 2005 NOAA Final Listing of Weather Modification Programs Spreadsheet 05WXMOD5.pdf](#) , [450VW 2004 NOAA Final Listing of Weather Modification Programs Spreadsheet 04WXMOD5.pdf](#)

2/19 Weather Modification Research and Technology Transfer Authorization Act of 2005 Senate Report of the Committee on Commerce, Science, and Transportation on S.517 109th Congress 1st session Senate Report 109-202 Source: <https://www.congress.gov/congressional-report/109th-congress/senate-report/202/1>

2/20 Letter from Executive Office of the President- Office of Science and Technology Policy to The Honorable Kay Bailey Hutchison. Response to S.517 ‘the Weather Modification Research and Development Policy Authorization Act of 2005’. December 13, 2005 Source: <https://www.legislative.noaa.gov/viewsletters/marburgerweathermodviewsletter121305.pdf>

2/21 Tropospheric Aerosol Program Program Plan March 2001. U.S. Department of Energy, Office of Science, Office of Biological and Environmental Research, Environmental Sciences Division. Source: <https://digital.library.unt.edu/ark:/67531/metadc723106/>

2/22 DOD Management Issues Related to Chaff

GOA report to Senator Harry Reid, September 1998. Chaff is composed of aluminum-coated silica glass fibers that can be spread by aircraft in flight, ships at sea, and vehicles on the ground to help them evade enemy radar.

<https://www.gao.gov/assets/230/226441.pdf>

2/23 DESIGN OF PHYSICAL CLOUD SEEDING EXPERIMENTS FOR THE ARIZONA ATMOSPHERIC MODIFICATION RESEARCH PROGRAM

“Cloud seeding experiments have been designed by the Bureau of Reclamation for winter orographic cloud systems over the Mogollon Rim of Arizona. The experiments are intended to test whether key physical processes proceed as hypothesized during both ground-based and aircraft seeding with silver iodide.”

Source: U.S. Department of the Interior. February 1991 Source: <https://www.usbr.gov/tsc/techreferences/rec/R9102.pdf>

2/24 WEATHER MODIFICATION: PROGRAMS, PROBLEMS, POLICY, AND POTENTIAL

Prepared for the Committee on Commerce Science and Transportation United States Senate, November 15, 1978 Source: <http://ufdc.ufl.edu/AA00025909/00001>

2/25 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD)

US Department of State - Bureau of International Security and Non-proliferation. Signed in Geneva on May 18, 1977. Entered into force October 5, 1978. “The Convention defines environmental modification techniques as changing -- through the deliberate manipulation of natural processes -- the dynamics, composition or structure of the earth, including its biota, lithosphere, hydro-sphere, and atmosphere, or of outer space.” Source: <https://www.state.gov/t/isn/4783.htm>

2/26 Need for a National Weather Modification Research Program

Congressional Report “Our review was made pursuant to the Budget and Accounting Act, 1921 (31 u. s. c. 53), and the Accounting and Auditing Act of 1950 (31 U. S. C. 67).” August 23, 1974 Source: <https://www.gao.gov/assets/210/200512.pdf>

2/27 1974 WEATHER MODIFICATION FUNDING time line of approved funding from the Oval Office for national weather modification program started in 1966 on NSF budget, later transferred to NOAA in 1972. Request is for 1974 budget. Source: <https://www.fordlibrarymuseum.gov/library/document/0055/1668699.pdf>

2/28 National Weather Modification Policy Act of 1976

PUBLIC LAW 94-490—OCT. 13, 1976 94th Congress An Act To authorize and direct the Secretary of Commerce to develop a national policy Oct. 13, 1976 on weather modification, and for other purposes. Source: <https://www.govinfo.gov/content/pkg/STATUTE-90/pdf/STATUTE-90-Pg2359.pdf>

2/29 INTERNATIONAL ASPECTS OF WEATHER MODIFICATION

NSC UNDER SECRETARIES COMMITTEE Confidential August 1, 1972 Source: CIA <https://www.cia.gov/library/readingroom/docs/CIA-RDP75B00514R000200060012-6.pdf>

2/30 ENGINEERING DESIGN HANDBOOK Military Pyrotechnics Series Part One - Theory and Application United States Army Materiel Command April 28, 1967
<http://www.dtic.mil/dtic/tr/fulltext/u2/817071.pdf>

2/31 MANUFACTURING METHODS - BRANCH METHODS AND MATERIALS DIVISION FIBER REINFORCEMENT OF METALIC AND NON-METALIC COMPOSITES Aeronautical Systems Division Air Force Command United States Air Force 17 January 1962 - 17 April 1962
<http://www.dtic.mil/dtic/tr/fulltext/u2/275565.pdf>

2/32 274. Memorandum From the Deputy Under Secretary of State for Political Affairs (Kohler) to Secretary of State Rusk. Foreign Relations of the United States, 1964–1968, Volume XXVIII, Laos. Weather Modification in North Vietnam and Laos (Project Popeye)
Source: <https://history.state.gov/historicaldocuments/frus1964-68v28/d274>

3/33 Weather and Climate Modification Report of the Special Commission on Weather Modification National Science Foundation NSF 66-3. December 20, 1965 Source: <https://www.nsf.gov/nsb/publications/1965/nsb1265.pdf>

STATE GOVERNMENT DOCUMENTS

3/34 WEATHER MODIFICATION - REGULATING RAIN MAKING Act of Jan. 19, (1968) 1967 PENNSYLVANIA - Providing temporarily for the regulation and licensing of rain-making activities; creating a Weather Modification Board within the Department of Agriculture and defining its powers and duties; imposing powers and duties on the Department of Agriculture and certain other State agencies; and providing penalties. Source: <http://www.legis.state.pa.us/WU01/LI/LI/US/PDF/1967/0/0449..PDF>

3/35 WEST VIRGINIA Weather Modification - Regulating Rain Making Act of January 19, 1968 Pennsylvania and ARTICLE 2B Weather Modification Chapter 29 CODE OF WEST VIRGINIA Passed February 26, 1969 Repealed March 9, 1995 Source: <http://www.wvlegislature.gov/WVCode/ChapterEntire.cfm?chap=29&art=2B>

3/36 ILLINOIS CRITERIA FOR WEATHER MODIFICATION OPERATIONS AND EFFECTIVE EVALUATION : 1980 <https://www.isws.illinois.edu/pubdoc/CR/ISWSCR-240.pdf>

3/37 MARYLAND “Cloud Seeding” – Archives of Maryland, Volume 0676, Page 0202 – Session Laws, 1965 / 1983 / 2005 Sources: <http://aomol.msa.maryland.gov/000001/000676/pdf/am676--202.pdf> / <https://msa.maryland.gov/megafile/msa/speccol/sc2900/sc2908/000001/000745/html/am745--121.html> / <https://law.justia.com/codes/maryland/2005/g25/3.html>

3/38 TEXAS Weather Modification and Control Agriculture Code, Title 9, Weather and Climate Chapters 301 and 3102. September 2007 Source: <https://www.tdlr.texas.gov/weather/wmlaw090107.pdf>

3/39 CALIFORNIA Optimizing Cloud Seeding for Water and Energy in California. California Energy Commission March 2007 Source: <https://www.energy.ca.gov/2007publications/CEC-500-2007-008/CEC-500-2007-008.PDF>

3/40 COLORADO WEATHER MODIFICATION RULES AND REGULATIONS August 1,1986 Source: <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=5336>

3/41 RHODE ISLAND - H6011 THE GEOENGINEERING ACT OF 2017 Source: <http://webserver.rilin.state.ri.us/BillText17/HouseText17/H6011.pdf>

3/42 TITLE 785. OKLAHOMA WATER RESOURCES BOARD CHAPTER 15. WEATHER MODIFICATION September 14, 2018 Source: <https://www.owrb.ok.gov/rules/pdf/current/Ch15.pdf>

3/43 The Florida Senate legislation search results for “Weather Modification Statutes” Source: <https://www.flsenate.gov/search/results?q=FLsenate+Weather+Modification+>

INTELLIGENCE DOCUMENTS

3/44 CONFIDENTIAL: INTERNATIONAL ASPECTS OF WEATHER MODIFICATION

NSC Secretaries Committee August 1, 1972 Source CIA Archive
<https://www.cia.gov/library/readingroom/docs/CIA-RDP75B00514R000200060012-6.pdf>

3/45 The Problem of the Application of Toxic Chemicals in the Form of Aerosols

Information from Foreign Documents or Radio Broadcasts Country: USSR July 1951
Source: CIA Archive
<https://www.cia.gov/library/readingroom/docs/CIA-RDP80-00809A000700070284-8.pdf>

3/46 Microlepton Radiation Effects on Weather, Human Organism Studied.

Programma Zombi USSR December 3, 1990 Source: CIA Archive
<https://www.cia.gov/library/readingroom/docs/CIA-RDP96-00792R000500680015-3.pdf>

3/47 US-USSR WEATHER MODIFICATION EXCHANGE

August 1974 Source: CIA Archive

<https://www.cia.gov/library/readingroom/docs/CIA-RDP79-00798A001000070009-1.pdf>

3/48 BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION (RADIO WAVES AND MICROWAVES) EURASIAN COMMUNIST COUNTRIES

source: DEFENSE INTELLIGENCE AGENCY – 1976 Source: http://www.ehsfri.dk/artikler/BIOLOGICAL_EFFECTS_OF_ELECTROMAGNETIC_RADIATION-RADIO WAVES_AND_MICROWAVES-EURASIAN_COMMUNIST_COUNTRIES.pdf

3/49 THE PROBLEM OF OBTAINING HIGH CONCENTRATIONS OF AEROSOLS

Information from Foreign Documents or Radio Broadcasts USSR Nov/Dec 1948 Source: CIA Archive

<https://www.cia.gov/library/readingroom/docs/CIA-RDP80-00809A000600270643-8.pdf>

3/50 EXCERPTS FROM MECHANICS OF AEROSOLS

144 page report RE work of Mekhanika Aerolev, Moscow, 1955, October 28, 1957

Source: CIA Archive

<https://www.cia.gov/library/readingroom/document/cia-rdp81-01043r001400130002-6>

4/1 PROSPECTUS: The Travelers Research Center, Incorporated. CIA gathered document regarding the staff scientists, research and experiments of insurance company connected weather research corporation in Hartford, CT which provided specialized services to US government sponsored National Weather System 433L. Date unknown / circa 1960 Source: CIA Archive <https://www.cia.gov/library/readingroom/docs/CIA-RDP78-03425A002100020012-4.pdf>

4/2 U-2 Support for Weather Modification Experiments - Naval Intelligence Command

SECRET Memorandum weather modification experiments held near Santa Barbara, CA from January - April 1973. January 5, 1973 Source: CIA Library: <https://www.cia.gov/library/readingroom/document/cia-rdp76b00734r000100250006-8>

4/3 SURVEY OF WEATHER MODIFICATION brief survey of the status of weather modification from Dr. Earl G. Droessler, responsible for the coordination of Department of Defense R&D in Meteorology. SECRET March 1, 1968 <https://www.cia.gov/library/readingroom/document/cia-rdp78-03425a002100020023-2>

PATENTS**4/4 Weather Control Patents (Class 239/14.1) Vortex ring-producing gun with recoiling nozzle Patent number: 9927205 Snowmaking (Class 239/14.2)**

source: JUSTIA Patents DATE OF PATENT March 27, 2018 Inventor: Jeffery M. Davis

<https://patents.justia.com/patents-by-us-classification/239/14.1>

4/5 Patent Application Publication January 17, 2013 CONCEPT AND MODEL FOR UTILIZING HIGH FREQUENCY OR RADAR OR MICROWAVE PRODUCING OR EMITTING DEVICES TO PRODUCE, EFFECT, CREATE, OR INDUCE LIGHTENING OR LIGHT SPEED OR VISIBLE TO NAKED EYE ELECTROMAGNETIC PULSE OR PULSES, ACOUSTIC OR ULTRASONIC SHOCKWAVES OR BOOMS IN THE AIR, SPACE, ENCLOSED, OR UPON ANY OBJECT OR MASS, TO BE USED SOLELY OR AS PART OF A SYSTEM, PLATFORM OR DEVICE INCLUDING WEAPONRY AND WEATHER MODIFICATION. Source: <https://patents.google.com/patent/US20130015260>

4/6 US Patent SOLAR POWERED AIRPLANE Date of Patent: April 4, 2000 Inventor: Franklin Y.K. Chen - ***of interest*** **RELATED U.S. APPLICATION DATA ABSTRACT for : A SATELLITE WEATHER MODIFICATION SYSTEM (SWMS)**
source: <https://patentimages.storage.googleapis.com/32/39/ba/ba706c1562e2a6/US6045089.pdf>

4/7 Apparatus and Related Methods for Weather Modification by Electrical Processes in the Atmosphere United States Patent US13056646 Inventor: Helmut Fluhrer, Elena Davydova, Yuri Saveliev. application date July 7, 2009 Assignment Owner name: METEO SYSTEMS INTERNATIONAL AG, SWITZERLAND January 31, 2011 Source: <https://patents.google.com/patent/US20110174892>

4/8 Antenna phasing control system United States Patent US 3271770 A
Inventor: Alan B Lees. Current Assignee: Electronic Specialty Co. Priority date: July, 07, 1963
Source: <https://patents.google.com/patent/US3271770>

4/9 Antenna structure for providing a uniform field United States Patent US5258766A
Inventor: Graham A. M. Murdoch Current Assignee: Magellan Tech Pty Ltd Original Assignee: Magellan Tech Pty Ltd. Uniscan Ltd. Priority date: December 10, 1987 Source: <https://patents.google.com/patent/US5258766>

4/10 Creation of artificial ionization clouds above the earth United States Patent US4999637A Inventor Ronald M. Bass . Current Assignee: BAE Systems Information and Electronic Systems Integration Inc . Original Assignee: Apti Inc. Priority date: June 14, 1987 <https://patents.google.com/patent/US4999637>

4/11 GENERATION OF ELECTRICAL FIELDS B. VONNEGUT
UNITED STATES PATENT 2,881,335 April 7, 1959 This invention relates to the conversion of mechanical energy into electrical energy and more particularly to a regenerative system for charging bodies or clouds. Source: <https://patentimages.storage.googleapis.com/c9/60/e7/36e504b4f3d01f/US2881335.pdf>

PUBLISHED RESEARCH***health:*****4/12 Climate and health implications of future aerosol emission scenarios**

Antti-Ilari Partanen, Jean-Sébastien Landry, and H Damon Matthews

Published 13 February 2018 • © 2018 IOP Publishing Ltd Environmental Research Letters, Volume 13, Number 2 Source: <http://iopscience.iop.org/article/10.1088/1748-9326/aaa511/pdf>**4/13 Assessing the direct occupational and public health impacts of solar radiation management with stratospheric aerosols**

US National Library of Medicine / National Institutes of Health Department of Environmental Health Sciences, University of Michigan, Utibe Effiong and Richard L. Neitzel Published online Jan 19, 2016

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4717532/>**4/14 Toxic Potential of Materials at the Nanolevel** Andre Nel, Tian Xia, Lutz Mädler, Ning Li. *Science* 03 Feb 2006: Vol. 311, Issue 5761, pp. 622-627 DOI: 10.1126/science.1114397Source: <http://science.sciencemag.org/content/311/5761/622>**4/15 Potential Impacts of Nanoparticles** Annual Review of Public Health Vol. 30:137-150(Volume publication date 21 April 2009) Tian Xia, Ning Li, and Andre E. Nel Division of NanoMedicine, Department of Medicine, University of California, Los Angeles. Asthma and Allergic Diseases Cooperative Research Centers, University of California, Los Angeles. The Southern California Particle Center, University of California, Los Angeles NanoSystems Institute, University of California, Los Angeles Source: <https://www.annualreviews.org/doi/pdf/10.1146/annurev.publhealth.031308.100155>**4/16 Oxidative stress induced by aluminum oxide nanomaterials after acute oral treatment in Wistar rats**P. V. Prabhakar, Utkarsh A. Reddy, S. P. Singh, A. Balasubramanyam, M. F. Rahman, S. Indu Kumari, Sachin B. Agawane, U. S. N. Murty, Paramjit Grover, Mohammed Mahboob. *Journal of Applied Toxicology* Volume 32, Issue 6, June 2012 Pages 436-445 Source: <https://onlinelibrary.wiley.com/doi/full/10.1002/jat.1775>**5/17 Exploring Inhaled Particles and Human Health at the New York University Institute of Environmental Medicine** Beverly S. Cohen. **Chapter 5** of *Aerosol Science and Technology: History and Reviews*, Edited by David S. Ensor ©2011 Research Triangle Institute.Source: https://www.rti.org/sites/default/files/resources/14154593_BK_0003_1109_Ensor.pdf**5/18 EVIDENCE ON THE DEVELOPMENTAL AND REPRODUCTIVE TOXICITY OF SULFUR DIOXIDE**Reproductive and Cancer Hazard Assessment Branch Office of Environmental Health Hazard Assessment California Environmental Protection Agency February 2011 Source: <https://oehha.ca.gov/media/downloads/proposition-65/chemicals/so2hid022511.pdf>

6/19 A Systemic Review of Potential Human Health Risks of Aluminum

Daniel Krewski, PhD, MHA, Professor and Director McLaughlin Center for Population Health Risk Assessment & Risk Sciences International presented at the 15th BfR Consumer Protection Forum November 26, 2014, University of Ottawa. Source: <http://www.bfr.bund.de/cm/343/a-systematic-review-of-potential-human-health-risks-of-aluminium.pdf>

6/20 Geoengineering Cost Analysis FINAL REPORT Prepared Under Contract to The University Of Calgary October 30, 2010 Source: Aurora Flight Sciences / SCRIBD uploaded by Matin Hume Source: <https://www.scribd.com/document/290015460/25-1-2010-University-of-Calgary-Geoengineering-Cost-Analysis-Using-Jets-October-30-2010-Aurora-Flight-Sciences-Final-Report-Keith-pdf>

6/21 Global, regional and local health impacts of civil aviation emissions

Steve H L Yim, Gideon L Lee, In Hwan Lee, Florian Allroggen, Akshay Ashok, Fabio Caiazzo, Sebastian D Eastham, Robert Malina and Steven R H Barrett Laboratory for Aviation and the Environment, Department of Aeronautics and Astronautics, Massachusetts Institute of Technology Published February 26, 2015 Source: <http://iopscience.iop.org/article/10.1088/1748-9326/10/3/034001/pdf>

6/22 Barium Promotes Anchorage-Independent Growth and Invasion of Human HaCaT

Keratinocytes via Activation of c-SRC Kinase Nguyen Dinh Thang, Ichiro Yajima, Mayuko Y. Kumasaka, Shoko Ohnuma, Takeshi Yanagishita, Rumiko Hayashi, Hossain U. Shekhar, Daisuke Watanabe, Masashi Kato “biological and biochemical findings newly suggest that the levels of barium shown in drinking well water independently has the cancer-promoting effects on precancerous keratinocytes, fibroblast and melanocytes *in vitro*.” Published: October 12, 2011 Source: <https://doi.org/10.1371/journal.pone.0025636>

6/23 Current and Future Particulate-Matter-Related Mortality Risks in the United States

from Aviation Emissions During Landing and Takeoff. Jonathan I. Levy, Matthew Woody, Bok Haeng Baek, Uma Shankar, Saravanan Arunachalam published July 30, 2011 source: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1539-6924.2011.01660.x>

6/24 Signal Strength RF Microwave Radiation Guidelines Graph explains why close proximity microwave antennas are hazardous and should not be allowed in public right-of-way in residential zones. NOTE: hard copy of Vol 7 includes locally distributed ELECTROMAGNETIC & RADIO FREQUENCY CONVERSION CHART outlining level of health effects. Source: <http://mystreetmychoice.com/press.html>

6/25 Electrosmog and Autoimmune Disease Trevor G. Marshall and Trudy J. Rumann Heil

July 13, 2016 US National Library of Medicine / National Institutes of Health Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5406447/>

6/26 Epidemiological Research on Cell Towers

COMPENDIUM of sources and discussion. Abdel-Rassoul, G., El-Fateh, O. A., Salem, M. A., Michael, A., Farahat, F. & El-Batanouny, M. (2007). Neurobehavioral effects among inhabitants around mobile phone base stations, Neurotoxicology Source: <http://www.emfresearch.com/epidemiological-research-on-cell-towers/>

6/27 Research on Radio- and TV-Transmitters + Radars Epidemiological studies of radio and TV transmitters

COMPENDIUM of sources and discussion. Dolk, H., Shaddick, G., Walls, P., Grundy, C., Thakrar, B., Kleinschmidt, I., et al. (1997) Source: <http://www.chronicexposure.org/transmitters.html>
<http://www.emfresearch.com/epidemiological-research-on-radio-and-tv-transmitters-radars/>

6/28 THE NUREMBERG CODE drafted at end of NAZI doctor trial in Nuremberg 1947 has been hailed as a landmark document in medical and research ethics. Close examination of this code reveals that it was based on the Guidelines for Human Experimentation of 1931 Source: <https://history.nih.gov/research/downloads/nuremberg.pdf>

PUBLISHED RESEARCH***industry:*****6/29 Chemical Properties of Aircraft Engine Particulate Exhaust Emissions**

“The test aircraft was the NASA DC-8 equipped with CFM56-2-C1 engines and the test matrix included 11 different engine throttle levels, three fuel compositions, and three sampling distances.” Source: Aerospace Research Central sighting Journal of Propulsion and Power Vol. 25, No. 5, Sept-Oct 2009
<https://arc.aiaa.org/doi/abs/10.2514/1.36371?journalCode=jpp>

6/30 SO_x oxidation and volatile aerosol in aircraft exhaust plumes depend on fuel sulfur content

Center for Aero-Thermodynamics, Aerodyne Research, Inc. , Atmospheric Sciences Division, NASA Langley Research Center, US Air Force Research Laboratory, Space Vehicles Directorate (VSBP), GEOPHYSICAL RESEARCH LETTERS, vol. 25. no. 10 May 15, 1998 referencing Paper number 98GL00064 Copyright 1998 by the American Geophysical Union
<https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/98GL00064>

6/31 Air Force F-16 Aircraft Engine Aerosol Emissions Under Cruise Altitude Conditions

Source: Langley Research Center and The NASA Scientific and Technical Information Program Office. March 1999
<https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19990027430.pdf>

6/32 Lifting options for stratospheric aerosol geoengineering: advantages of tethered balloon systems

“The Royal Society report ‘Geoengineering the Climate’ identified solar radiation management using albedo-enhancing aerosols injected into the stratosphere as the most affordable and effective option for geoengineering, but did not consider in any detail the options for delivery.” Source: Philosophic Transactions of the Royal Society 2012
http://www2.eng.cam.ac.uk/~hemh1/SPICE/papers/PhilTransRoySoc_LiftingOptions_Davidson_Burgoyne_Hunt_Causier.pdf

6/33 Variability in morphology, hygroscopicity, and optical properties of soot aerosols during atmospheric processing Renyi Zhang, Alexei F. Khalizov, Joakim Pagels, Dan Zhang, Huaxin Xue, and Peter H. McMurry *Department of Atmospheric Sciences, Texas A&M University, Department of Mechanical Engineering, University of Minnesota, Division of Aerosol Technology, Ergonomics and Aerosol Technology, SE-211 00 Lund, Sweden Communicated by Mario J. Molina, University of California at San Diego, La Jolla, CA. May 19, 2008
Source: <http://www.pnas.org/content/pnas/105/30/10291.full.pdf>

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Philip J. Rasch, Simone Tilmes, Richard P. Turco, Alan Robock, Luke Oman, Chih-Chieh (Jack) Chen, Georgiy L. Stenchikov National Center for Atmospheric Research,
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Max-Planck-Institut für Kernphysik, Bereich Atmosphärenphysik, Heidelberg, Germany
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John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA, John F. Kennedy School of Government, Harvard University, Cambridge, MA, USA
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Charles A. Brock, Department of Engineering, University of Denver, Denver Colorado. Franz Schroder, Bernd Karcher, Andreas Petzold, Reinhold Busen, Markus Fiebig **Copyright 2000 American Geophysical Union**

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by John Keller “DARPA ACT contractors have developed a common module solution that serves as a broadband 32-channel digital receiver, exciter, and beam-forming module. Now military researchers want to move this technology to a third party for commercializing and production manufacturing.”

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Physicist David Keith, who has been working on technologies to block sunlight to slow global warming, argues that such efforts need to remain in the public domain

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By [Brian Dobbs, Patch Poster](#) | Feb 14, 2019 3:00 pm ET | Updated Feb 14, 2019 3:23 pm ET
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IMPORTANT VIDEO PRESENTATIONS

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presented February 15, 2017 Israel Institute for Advanced Studies at Hebrew University
FULL LECTURE
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Dr. Erica Mallery-Blythe highlights the health concerns regarding use of radiofrequency (Group 2b Carcinogen) communication devices in this concise summary. Aimed especially at protecting the health of children, but valuable to all, this presentation highlights the current cautions from independent scientists globally on the issue of unregulated microwave exposure from rapidly escalating use of such devices and cell towers, etc. Unprecedented revenue has blocked appropriate precaution to hazards of electromagnetic technology on living systems, and how to protect health. FULL LECTURE https://www.youtube.com/watch?time_continue=341&v=sNFdZVeXw7M

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