Annotated Bibliography of Ethical Issues in Physics: Physicists as Advisors to Society and Leaders

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Ethical Issues in Physics
Bibliography assembled by
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Eastern Michigan University
February 2012

Physicists as Advisors to Society and Leaders

SEC, ADV
APS Forum on Physics and Society Newsletter
Volume 40, Number 4 October 2011
Judging Edward Teller: A closer look at one of the most influential scientists
of the Twentieth Century
Istvan Hargittai (reviewed by Leonard R. Solon
Book Review

ADV, SOC
APS Forum on Physics and Society Newsletter
Volume 40, Number 3 July 2011
Honesty, Perseverance, and Objectivity: Lessons from a Life in Public
Policy
John F. Ahearne
The author draws on examples ranging from accidents in nuclear power
plants to his experience with national security issues.

SEC, ENE, ADV
Physics Today – July 2011
Volume 64, Issue 7, p. 31
Adventures in scientific nuclear diplomacy
Siegfried S. Hecker
The author recounts his experiences working on nuclear security issues
involving Russia, China, North Korea, and South Africa.
At work in the trenches of science diplomacy
David Kramer
An interview with Alex Deghan, Science Advisor at the U.S. Agency for International Development.

Science diplomacy enlisted to span US divide with developing world
David Kramer
Discusses how scientists from organizations such as the Federation of American Scientists can help bridge international gaps through cooperative efforts with scientists from other countries such as Yemen.

Marburger calls for a new academic field of study in `the science of science policy'
David Kramer
A former science advisor advocates formal studies and models of national science policy as a means for more effectively guiding such policy.
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ADV
APS Forum on Physics and Society Newsletter
Volume 38, Number 2 April 2009
Review of the 2008 APS Energy Study, Energy Future: Think Efficiency
David Hafemeister
The author focuses on energy use by automobiles, but addresses use in buildings and appliances toward the end.

APS Forum on Physics and Society Newsletter
Volume 38, Number 3 July 2009
Letters to the Editor
Vladislav Bevc
David Hafemeister and Peter Schwartz respond

END LINK
Joseph Rotblat and the Moral Responsibilities of the Scientist
Martin Clifford Underwood
A brief biography of Joseph Rotblat, including his involvement in the Manhattan Project and in Pugwash.

The Future of US Nuclear Weapons
Richard L. Garwin
Modified from a draft of Richard Garwin’s testimony to the Congressional Commission on the Strategic Posture of the United States focusing mostly on stockpile stewardship but with some discussion of missile defense.

Advocacy Threatens Scientific Integrity
By Robert E. Levine
The author argues that the APS statement on climate change is in conflict with its own principles of openness.

Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945-1975
By Kelly Moore, Reviewed By Joe Levinger
Book Review
Panofsky on Physics, Politics, and Peace: Pief Remembers
Wolfgang K. H. Panofsky and George Trilling, Reviewer

Bulletin of the Atomic Scientists
63.6 (November-December 2007) pp. 48-53
Peace talk: My life negotiating science and policy
W. K. H. Panofsky
This excerpt from the late particle physicist’s autobiography discusses his role as a policy advisor, particularly in the area of national security issues.

The Origins of CAFE
Allan R. Hoffman
This personal history provides a nice case study for the impact that a scientist can have on important legislation.

A Physicist Proselytizes About Countering Global Warming
Toni Feder
An interview with John Houghton, a retired atmospheric physicist, about his lectures on global warming to Christian groups.

Houghton friends and foes weigh in on global warming
Ben Zuckerman, Brahma D. Sharma, Warren Norred, Rustum Roy, and Foster Morrison

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Eisenhower, Scientists, and Sputnik
John S. Rigden
Eisenhower’s action following the Sputnik launch is put into the larger context of physicists providing advice to the government.

Physics Today -- November 2007
Volume 60, Issue 11, pp. 13-14
Science and the White House
Lawrence Cranberg and John S. Rigden

Nuclear Proliferation: Capability versus Intent
W.K.H. Panofsky
This article focuses on the need to control access to fissile material and what international policy changes are needed to realize this control.
Scientists Go Political in New Organization
Jim Dawson
Discusses the formation of Scientists and Engineers for America, an organization focused on promoting more discussion of science issues in the political arena.

Campaign Aims at Scientists and Engineers
Jim Dawson
Good follow-up article illustrating the interplay between science and politics.

Personal Observations on Science Advice to the President
Neal Lane
These reflections provide good insight into the mechanics of working as the Science Advisor to the President.

A discussion of Allan Bromley’s role as Science Advisor to President Bush, starting in 1989.
Reflections of a Science Advisor: General Considerations, the Superconducting Supercollider (SSC) and the Space Station
John H. Gibbons
The author provides personal reflections on his role in providing advise to the White House on big science projects.

Reflections of a Science Advisor: II. Approaches to Science Advice and Policy Formulation, and a Few Vignettes, John H. Gibbons
A continuation of the previous article, this part providing one paragraph synopses of several other key issues that arose while the author was Science Advisor. Issues range from environmental to national security.

Science-Based Cleanup of Rocky Flats
David L. Clark1, David R. Janecky1, and Leonard J. Lane2
The author describes how key advice from scientists led to a quicker, more effective clean-up of radioactive contamination.

Cleanup, Not Cover-Up, at Rocky Flats
William R. Alschuler, Anne Fenerty, David L. Clark, David R. Janecky, and Leonard Lane
Reappraising Oppenheimer, Centennial Studies and Reflections. Edited by Cathryn Carson and David Hollinger
Reviewed by Lincoln Wolfenstein
Book Review

Scientists, Security, and Lessons from the Cold War
Charles H. Holbrow
The author describes the Summer Study program, begun early in the Cold War, in which a group of scientists from academia would focus their attention on problems of relevance to national security.

The Jasons: The Secret History of Science's Postwar Elite
Ann Finkbeiner
Reviewed by John Prados
Book Review

Physicists Protest US Nuclear Policy
Toni Feder
Physicists at the University of California San Diego launch a petition drive to urge that the Nuclear Non-Proliferation Treaty not be undermined.

American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer
Kai Bird, Martin J. Sherwin, and John S. Rigden, Reviewer
Book Review
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ADV
Bulletin of Atomic Scientists
61.5 (September-October 2005) pp. 40-49
Requiem for an office
Chris Mooney
This article discusses the history of the Office of Technology Assessment, which provided technical advice to the Congress from 1972-1994. It focuses on events that led to its demise and efforts to revive it.

Bulletin of Atomic Scientists
62.1 (January-February 2006) pp. 5-6
Letters to the Editor
Rush Holt, James Louis Holt, Adam Keiper, Chris Mooney

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ADV
APS Forum on Physics and Society Newsletter
Volume 34, Number 4 October 2005
Introduction to a Sequence of Articles in Physics & Society on Science Input to Government
W.K.H. Panofsky
Provides a brief history of science advising in the U. S. and identifies key sources of tension between science advisors and those they advise.

ADV
APS Forum on Physics and Society Newsletter
Volume 34, Number 4 October 2005
Scientific Integrity in Government and Ballistic Missile Defense
Edwin E. Salpeter
The author discusses four cases, some of which he had personal involvement with, where technical issues arose related to weapons systems. Advice provided by scientists met with varying reception.
J. Robert Oppenheimer: And the American Century, David Cassidy
Reviewed by Gary Prézeau
Book Review

Hans in War and Peace
Richard L. Garwin and Kurt Gottfried
This article provides a good overview of a physicist who was active throughout most of his career in providing advice on technical issues. Topics span the early days of the Manhattan project to the 1980s debate on missile defense.

Hans Bethe - Last of the Giants
Sidney Drell
Brief, personal reflection on Bethe.
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APS Forum on Physics and Society Newsletter
Volume 34, Number 2 April 2005
Hans Bethe and Societal Issues
Edwin E. Salpeter
A condensed overview of Bethe’s contributions.

APS Forum on Physics and Society Newsletter
Volume 34, Number 3 July 2005
Hans Bethe and Nuclear Power
Richard Wilson

APS Forum on Physics and Society Newsletter
Volume 34, Number 4 October 2005
UCS and Nuclear Power
Kurt Gottfried

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Physics Today -- July 2005
Volume 58, Issue 7, p. 33
Proliferation Is Key Issue in Nuclear Power Resurgence
Jim Dawson
An APS study group looks at the overlap in technologies associated with peaceful and military use of nuclear energy.

ADV
APS Forum on Physics and Society Newsletter
Volume 34, Number 2 April 2005
An Episode among the Many Contributions of Hans Bethe to Physics and Society
Wolfgang K.H. Panofsky
Discusses Bethe’s role in bringing scientists into negotiations related to verifiability of nuclear test ban treaties.

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National Academies Committee Sets Steps for Bringing Best Science Advice to Washington
Jim Dawson
The NAS issues recommendations for the process of appointing science advisors in the White House and the process of assembling science advisory panels.

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Physics Today -- September 2004
Volume 57, Issue 9, pp. 29-30
Court Rules Against 10 000-Year Radiation Safety Standard at Yucca Mountain
Jim Dawson
The court ruled that the EPA must appropriately account for National Academy of Sciences findings.

Physics Today -- December 2004
Volume 57, Issue 12, pp. 12-14
Yucca Mountain Nuclear Waste Containment Standard a Hot Topic
Dick Schmidt, Thomas Bjerstedt, Wenonah Hauter, Ron Bourgoin, and Cameron Reed

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ADV
Science and Engineering Ethics
Volume 10, Number 3 / September, 2004, pp. 437-455
An in depth discussion of the difficulties that arise associated with uncertainty when scientists advise governments. Includes some specific cases and a discussion of how governments can and do manipulate science.
Jerry Wiesner: Scientist, Statesman, Humanist—Memories and Memoirs
Walter A. Rosenblith and Wolfgang K. H. Panofsky, Reviewer

This brief article on a statement issued by the Union of Concerned Scientists raises some useful issues about the role of scientists as advisors to society. There is not time in the brief article to get into a detailed discussion of the facts it alludes to.

Marburger Refutes Claims That Bush Administration Misuses Science
Jim Dawson and Paul Guinnessy

The author describes first hand experience with this program designed to equate physicists with public policy making and to provide members of Congress with technical expertise.
ADV
APS Forum on Physics and Society Newsletter
Volume 33, Number 1 January 2004
Examining an Alternative Approach to the Science Congressional Fellowship Program: The D.C.-Academia Revolving Door
David Hafemeister
Discusses some advantages to a career spent partly in academia and partly in government, including the ability to write independently while in the academic world.

ADV
Physics Today -- June 2003
Volume 56, Issue 6, pp. 59-60
In War and Peace: My Life in Science and Technology
Guy Stever and D. Allan Bromley, Reviewer

ADV
Bulletin of the Atomic Scientists
59.3 (May-June 2003): pp. 52-59
Nixing nukes in Vietnam: in 1966, a group of scientists studied the possible use of nuclear weapons in Vietnam. Here's why their report advised against it.
Peter Hayes and Nina Tannenwald
For scientists (members of JASON) took the initiative in 1966 to study the possible use of nuclear weapons in Vietnam, in response to casual mention of the possibility.

ADV
APS Forum on Physics and Society Newsletter
Volume 32, Number 2 April 2003
Nuclear Policing the World
Nina Byers
This is a brief commentary, but it does a nice job of illustrating the interest of many of the Manhattan Project Physicists in policies associated with nuclear weapons.
ADV
APS Forum on Physics and Society Newsletter
Volume 32, Number 2 April 2003
Brotherhood of the Bomb by Gregg Herken
Reviewed by Andrew M.B Sessler
Book Review

ADV
Science and Engineering Ethics
Volume 8, Number 4 / December, 2002, pp. 593-602
Consensus conference on environmental values in radiation protection: a report on building consensus among experts
Matthias Kaiser and Ellen-Marie Forsberg
The author uses a conference on radiation protection to illustrate the use of a consensus conference to provide advice to society on technological issues.

ADV
Physics Today -- October 2002
Volume 55, Issue 10, pp. 25-26
NAS Finds No Flaws in Nuclear Treaty
Paul Guinnessey
This investigation of the Comprehensive Test Ban Treaty by the National Academy of Sciences provides a nice case study on scientific organizations providing technical advice.

ADV
Bulletin of the Atomic Scientists
58.4 (July-August 2002): pp. 65-66
Science, Money, and Politics: Political Triumph and Ethical Erosion Daniel S. Greenberg
Reviewed by Michael S. Reidy
Book Review
ADV
APS Forum on Physics and Society Newsletter
Volume 31, Number 3 July 2002
Does the U.S. Need New Nuclear Weapons?
Frank N. von Hippel
The author suggests that calls for the development of new types of nuclear weapons may go hand in hand with a shift in the perspective that nuclear weapons should only be considered weapons of last resort. He calls on physicists to take an active role in the debate.

ADV
APS Forum on Physics and Society Newsletter
Volume 31, Number 4 October 2002
Nuclear Earth-Penetrators: a Dangerous Fantasy
A. DeVolpi

ADV
Bulletin of the Atomic Scientists
58.3 (May-June 2002): pp. 28-37
Lowering the bar: the government wants to save money by loosening radiation exposure standards--how low will it go?
LeRoy Moore.
This discussion of radiation standards looks at competing exposure models: the linear, no-threshold model and the threshold model. It also provides interesting insight into policy formulation in a political and scientific environment.

ADV
APS Forum on Physics and Society Newsletter
Volume 31, Number 2 April 2002
Nuclear Terrorism
Donald D. Cobb
and
Radiological Terrorism
Steven E. Koonin
Two commentaries on dirty bombs. The second is from congressional testimony.
Life Views and Particle Physics
David Hafemeister
The author discusses the roles some particle physicists have played in providing advice on science and society issues.

Legislation to Revive OTA Focuses on Science Advice to Congress
Jim Dawson
News article on the possibility of reviving the Office of Technology Assessment, which had provided advice to Congress on technical issues before being disbanded in the 1980s. The article provides a brief history of OTA.

Our National Energy Situation is a Mess!
Albert A. Bartlett
A physicist testifies before Congress.

The Early Days of Pugwash
Joseph Rotblat
A participant in the Pugwash Conferences describes the history of these meetings between scientists on opposite sides of the Iron Curtain during the Cold War.
Boehlert Seeks Stronger Voice for Science on Capitol Hill
Jim Dawson
An interview with a member of Congress provides a quick overview of how some science issues are viewed on Capitol Hill.

Unarmed Forces: The Transnational Movement to End the Cold War
Mathew Evangelista and Herbert L. Abrams, Reviewer
Book Review