

Ethical Issues in Physics
Bibliography assembled by
Marshall Thomsen
Eastern Michigan University
February 2012
General Ethics Resources and those not neatly fitting into the
above groups

GEN

Science and Engineering Ethics

Volume 17, Number 1 / March 2011, pp. 197-199

Adil Shamoo and David Resnik: The Responsible Conduct of Research

Oxford University Press, Oxford, 2009, 2nd edition. ISBN: 9780195368246

Gary Santillanes

Book Review

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Physics Today—July 2010

Volume 63, Issue 7, p. 10

Scientific declarations best left to scientists

B. K. Ridley

A letter to the editor indicating that scientists, not scientific societies, should make scientific declarations.

Physics Today—September 2010

Volume 63, Issue 9, pp. 9-10

Scientific societies should speak out

Alfred B. Bortz

Letter in response to Ridley's letter

Physics Today—March 2011

Volume 64, Issue 3, p. 8

Scientists offer opinions about their opinions

James M. Kent

Letter in response to Bortz's and Ridley's letters

Physics Today—March 2011

Volume 64, Issue 3, p. 8

Scientists offer opinions about their opinions

Brian Sutcliffe

Letter in response to Ridley's letter

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Science and Engineering Ethics

Volume 15, Number 4 / December, 2009, pp. 577-600

Educating the Humanitarian Engineer

Kevin M. Passino

The author describes the obligations of engineers to perform public service and then discusses how service projects can be integrated into the curriculum to provide students with the opportunity to engage in public service.

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Science and Engineering Ethics

Volume 15, Number 3 / September, 2009, pp. 263-269

Editors' Overview: Forbidding Science?

Gary E. Marchant and Stephanie J. Bird

An overview of a conference and of this special issue of SEE on the topic of whether certain areas of scientific research should be forbidden.

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Science and Engineering Ethics

Volume 15, Number 3 / September, 2009, pp. 351-366

Science, Democracy, and the Right to Research

Mark B. Brown and David H. Guston

This article looks at the definition of “rights” and explores political and legal aspects of the right to research. It notes that society can restrict research in a given area not only by banning it, but also by merely denying support for it.

Science and Engineering Ethics

Volume 15, Number 3 / September, 2009, pp. 367-373

Private Interests Count Too

Commentary on “Science, Democracy, and the Right to Research”

Mark S. Frankel

In his commentary on the above paper, this author points out that scientists must also deal with corporate influences on the direction of research.

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Science and Engineering Ethics

Volume 15, Number 3 / September, 2009, pp. 375-394

The Problems with Forbidding Science

Gary E. Marchant and Lynda L. Pope

The authors argue that restrictions on scientific research are best imposed by scientists themselves: they have a demonstrable interest in maintaining the public trust and they can respond more quickly and effectively to evolving fields of inquiry.

Science and Engineering Ethics

Volume 15, Number 3 / September, 2009, pp. 395-406

Scientific Self-Regulation—So Good, How Can it Fail?

Commentary on “The Problems with Forbidding Science”

Patrick L. Taylor

This commentary on the preceding paper contrasts successful self-regulation of stem cell research to less than successful self regulation in issues related to conflict of interest.

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Physics Today -- July 2009

Volume 62, Issue 7, pp. 8-9

What is science?

Helen Quinn

A fundamental understanding of what is meant by science lays the foundation for a discussion of ethics in science and for talking to the general public about science.

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Physics Today -- March 2009

Volume 62, Issue 3, pp. 37-42

Testing relativity from the 1919 eclipse—a question of bias

Daniel Kennefick

A discussion of the analysis and re-analysis of data from an early experiment testing a key prediction of general relativity provides a good case study on the possible role of bias in interpretation of data.

Physics Today -- November 2009

Volume 62, Issue 11, p. 8

Study of 1919 eclipse sparks talk of terms and terminology

Cyril Galvin and George L. Murphy

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Physics Today -- July 2008

Volume 61, Issue 7, pp. 52-53

Science for Sale The Perils, Rewards, and Delusions of Campus Capitalism

Daniel S. Greenberg and William H. Wing, Reviewer

Book Review

GEN

Science and Engineering Ethics

Volume 14, Number 1 / March, 2008, pp. 139-147

Is There an Effective Approach to Deterring Students from Plagiarizing?

Lidija Bilic-Zulle, Josip Azman, Vedran Frkovic and Mladen Petrovecki

A study at a Croatian medical school indicated a measurable decrease in plagiarism when students were informed ahead of time that their essays would be run through software designed to detect plagiarism.

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Science and Engineering Ethics

Volume 13, Number 4 / December, 2007, pp. 437-461

The Perverse Effects of Competition on Scientists' Work and Relationships

Melissa S. Anderson, Emily A. Ronning, Raymond De Vries and Brian C. Martinson

A focus group of mid-career members of the life sciences community was used to investigate the negative consequences of competition in science, such as game-playing, decline in openness, and abuse of the peer review process.

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Physics Today -- May 2007

Volume 60, Issue 5, pp. 56-60

Remembering the Oil-Drop Experiment

Michael F. Perry

Looks at conflicting statements about who was responsible for what aspects of the famous oil drop experiment.

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Physics Today -- November 2005

Volume 58, Issue 11, pp. 31-35

Einstein's Mistakes

Steven Weinberg

This article can serve as a reminder to students on why open debate is important in science. The physics community should be structured to allow any idea—no matter what its source—to be challenged on scientific grounds. It also provides a more realistic picture than ordinarily given in textbooks of how science evolves.

Physics Today -- April 2006

Volume 59, Issue 4, pp. 10-14

The Value of Einstein's Mistakes

Alfred Scharff Goldhaber, Tom Cornsweet, Hans C. Ohanian, Ravi Gomatam, Ron Larson, Brian C. Hall, Roger G. Newton, Bob Eisenberg, Robert E. Becker, and Steven Weinberg

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Physics Today -- June 2005

Volume 58, Issue 6, pp. 26-27

Creationist Wave Hits Volcanoes of the Deep Sea

Jim Dawson

An IMAX movie with references to evolution and earth history dating back hundreds of millions of years has had some difficulty getting onto the screens of some museum IMAX theaters.

Physics Today -- June 2005

Volume 58, Issue 6, p. 27

Scientists Boycott Kansas Antievolution Hearings

Jim Dawson

One paragraph article on scientists objecting to the premise of the hearing that evolution is a matter of expert opinion as opposed to a theory backed up by data.

Physics Today -- August 2005

Volume 58, Issue 8, pp. 24-25

Evolution Wars Show No Sign of Abating

Jim Dawson

Physics Today -- September 2005

Volume 58, Issue 9, p. 17

Middle Ground in the Creationism Debate?

Fred E. Camfield

Physics Today -- January 2006

Volume 59, Issue 1, pp. 32-33

Evolution Wins in Pennsylvania, Loses in Kansas

Jim Dawson

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Physics Today -- May 2005

Volume 58, Issue 5, p. 67

Debunked! ESP, Telekinesis, and Other Pseudoscience

Georges Charpak, Henri Broch, and James Randi, Reviewer

Book Review

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Physics Today -- February 2005

Volume 58, Issue 2, pp. 24-26

After Serious Accident, SLAC Experiments Remain Shut Down and DOE Report Faults Lab's Safety Oversight

Bertram Schwarzschild

At issue is whether safety standards were sacrificed in an effort to focus on producing results more rapidly.

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Physics Today -- January 2005

Volume 58, Issue 1, pp. 35-41

Computational Science Demands a New Paradigm

Douglass E. Post and Lawrence G. Votta

Theorists and experimentalists have standard techniques for checking and rechecking their work. These authors argue that the changing face of computational physics requires new standards for what is meant by exercising due care in computational physics.

Physics Today -- August 2005

Volume 58, Issue 8, pp. 12-15

Validating the Need to Validate Code

Thomas P. Sheahen, Craig Bolon, Rudolf Eigenmann, Josip Loncaric, Bob Eisenberg, R. Casanova Alig, Denes Marton, Douglass E. Post, and Lawrence G. Votta

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Physics Today -- November 2004

Volume 57, Issue 11, pp. 42-46

Ethics and the Welfare of the Physics Profession

Kate Kirby and Frances A. Houle

This article reports on one of the few surveys on the topic of ethics within the physics community. Particular attention is paid to the treatment of subordinates in the academic community.

Physics Today -- July 2005

Volume 58, Issue 7, pp. 12-17

Ethics Concerns Draw Many Questions, Some Answers

Peter Foukal, Frank Melsheimer, Georg Albrecht, Jeffrey Marque, Marshall Thomsen, Joseph O. West, Kate Kirby, Frances Houle, Leonard Finegold, and Caroline Whitbeck

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Physics Today -- November 2004

Volume 57, Issue 11, pp. 42-46

Ethics and the Welfare of the Physics Profession

Kate Kirby and Frances A. Houle

The article discusses the shift in emphasis from punishing wrongdoing to promoting research integrity. The author is the director of the Online Ethics Center for Engineering and Science.

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Physics Today -- November 2004

Volume 57, Issue 11, pp. 55-60

From the Archives: The Scientist's Code of Ethics

Wayne A. R. Leys

This reprint of a 1952 Physics Today article argues that there is no special ethics for science. The key is to recognize when a value-based decision is being made.

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Science and Engineering Ethics

Volume 10, Number 3 / September, 2004, pp. 483-491

Scientific misconduct and findings against graduate and medical students

Debra M. Parrish

An overview of cases closed by NSF and NIH involving graduate students shows that most often they are found to have falsified or fabricated data.

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Science and Engineering Ethics

Volume 10, Number 2 / June, 2004, pp. 235-242

Eight-dimensional methodology for innovative thinking about the case and ethics of the mount graham, large binocular telescope project

Rosalyn W. Berne and Daniel Raviv

When construction of an observatory is planned for sacred Native American grounds, astronomers confront some issues they are not used to dealing with.

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Science and Engineering Ethics

Volume 10, Number 2 / June, 2004, pp. 311-324

Does academic dishonesty relate to unethical behavior in professional practice? An exploratory study

Donald D. Carpenter, Trevor S. Harding, Cynthia J. Finelli and Honor J. Passow

This exploratory study of engineering students looks at the correlation between the likelihood of their self-reporting cheating in the academic environment and their self-reporting temptations to break workplace rules.

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Physics Today -- January 2004

Volume 57, Issue 1, p. 51

Responsible Conduct of Research

Adil E. Shamoo, David B. Resnik, and Myriam P. Sarachik, Reviewer

Book Review

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Physics Today -- October 2003

Volume 56, Issue 10, pp. 55-61

The Contentious Role of a National Observatory

While the early part of this article is mostly historical, towards the end it raises interesting questions on how limited scientific resources (such as observatory time) should be distributed.

W. Patrick McCray

Physics Today -- April 2004

Volume 57, Issue 4, pp. 13-14

National Observatories: Contention Continues

William E. Howard III, Cameron Reed, and W. Patrick McCray

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Science and Engineering Ethics

Volume 9, Number 2 / June, 2003, pp. 159-170

Ethics for all: Differences across scientific society codes

Merry Bullock and Sangeeta Panicker

The authors review a large number of professional codes, discussing their scope and purpose. Common themes as well as elements peculiar to a specific profession are identified.

Science and Engineering Ethics

Volume 9, Number 2 / June, 2003, pp. 171-179

Developing a code of ethics for academics

Commentary on 'ethics for all: Differences across scientific society codes' (Bullock and Panicker)

Celia B. Fisher

The author discusses an possible aspirational code of ethics for those in academia and what changes in the code would be needed to turn it into an enforceable one.

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Physics Today -- February 2003

Volume 56, Issue 2, pp. 48-52 pp. 54-55

Arrogance—A Dangerous Weapon of the Physics Trade?

J. Murray Gibson

A wide-ranging opinion piece that its on how physicists relate to society and to each other, and how physicists deal with ethical issues.

Physics Today -- July 2003

Volume 56, Issue 7, pp. 12-16

Readers Respond About Arrogance, Confidence, Brilliance, Humility, and Stupidity

Richard J. Noer, T. N. Narasimhan, James Kellinger, Leonard R.

Weisberg, Kurt Nassau, Jeffrey Marque, Leonard Finegold, Robert K.

Adair, Harry J. Lipkin, and J. Murray Gibson

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APS Forum on Physics and Society Newsletter

Volume 32, Number 1 January 2003

Sniffer Plane Secrets and Political Courage

Alan J. Scott

While this article straddles the fence between science/society issues and political analysis, it does serve to illustrate the importance of openness in scientific inquiry by examining a celebrated case of fraud in military research.

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Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 191-205

Six domains of research ethics

A heuristic framework for the responsible conduct of research

Kenneth D. Pimple

The author argues that responsible conduct of research can be broken up into six domains: scientific integrity, collegiality, protection of human subjects, animal welfare, institutional integrity, social responsibility. The appendices contain very useful reference information on terminology related to the responsible conduct of research.

Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 206-210

Teaching social responsibility: The manhattan project

Commentary on “Six domains of research ethics” (K.D. Pimple)

Penny J. Gilmer and Michael DuBois

Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 211-214

Four observations about “Six domains of research ethics”

Edward J. Hackett

Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 215-218

Ethical decision-making in research: Identifying all competing interests

Commentary on “Six domains of research ethics” (K.D. Pimple)

Michael Kalichman

Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 219-222

Commentary on “Six domains of research ethics”

Sheila Slaughter

Science and Engineering Ethics

Volume 8, Number 2 / June, 2002, pp. 223-227

Making sense of scientists’ responsibilities at the interface of science and society

Commentary on “Six domains of research ethics”
Vivian Weil

Science and Engineering Ethics
Volume 8, Number 2 / June, 2002, pp. 229-234
Beyond fabrication and plagiarism: The little murders of everyday
science
Commentary on “Six domains of research ethics”
Michael J. Zigmond and Beth A. Fischer

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Physics Today -- April 2002
Volume 55, Issue 4, pp. 16-18
Skepticism Greet Claim of Bubble Fusion
Barbara Goss Levi
Interesting illustration of active scientific debate.

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Science and Engineering Ethics
Volume 8, Number 1 / March, 2002, pp. 43-57
Ethics and science: Educating the public
R. Brownhill and L. Merricks
Looks at a debate over fundamental ethical issues in science that took place
in the first half of the twentieth century, including issues such as to what
extent are scientists responsible for how their research is used.

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Physics Today -- March 2002
Volume 55, Issue 3, p. 63
The Politics of Excellence: Behind the Nobel Prize in Science
Robert Marc Friedman and Helge Kragh, Reviewer
Book Review

GEN

Physics Today -- February 2002

Volume 55, Issue 2, pp. 56-57

Nine Crazy Ideas in Science: A Few Might Even Be True

Robert Ehrlich and William H. Ingham, Reviewer

Book Review

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Science and Engineering Ethics

Volume 7, Number 4 / December, 2001, pp. 507-520

Influences on the ethical beliefs of graduate students concerning research

Robert L. Sprague, Jessica Daw and Glyn C. Roberts

Report on a survey of faculty and students at one Midwestern university (across a wide range of departments). Includes extensive quotes from open-ended questions.

Science and Engineering Ethics

Volume 7, Number 4 / December, 2001, pp. 521-524

Mentoring and ethical beliefs in graduate education in science

Rachelle D. Hollander

Commentary on 'influences on the ethical beliefs of graduate students concerning research' (Sprague, Daw and Roberts)

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Volume 7, Number 3 / September, 2001

Science and Engineering Ethics, pp. 347-364

Serious misapplications of military research: Dysfunction between conception and implementation

Jacques G. Richardson

An extensive list of scientists working in a military setting with safety concerns being minimized in the pursuit of knowledge.

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Science and Engineering Ethics

Volume 6, Number 4 / December, 2000, pp. 435-442

Ethical issues in communicating science

Jinnie M. Garreu and Stephanie J. Bird

Lays out a framework for discussion of issues related to communication within the scientific community as well as between scientists and society at large.

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Bulletin of the Atomic Scientists

56.2 (March 2000): pp. 42-46

Edwin Lyman and Steven Dolley.

Accident prone (analysis of the accident at the Tokaimura nuclear facility in Japan)

This article is useful not only in the context of a study of the nuclear energy fuel cycle but also for its illustration of the perils of cutting corners in safety procedures.

Bulletin of the Atomic Scientists

56.3 (May 2000): p4

Perspective, please (Letter)

Bertram Wolfe

Bulletin of the Atomic Scientists

56.5 (September 2000): p3.

Special means special (letter)

Dean E. Abrahamson

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