# Biomedical Ethics and Public-Health Risks

BIOS 50545, PHIL 43708, STV 40216 **Fall 2006** file: 2006-BEPH-Fall-2006.5

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Professor: Dr. Kristin Shrader-Frechette Class Time: Tuesday 3:30-6:00

Classroom: Malloy 320 Website: http://www.nd.edu/~kshrader

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To help the professor learn everyone's name, quickly, please sit in the same spot for every class.

**Place of Office Hours:** Decio 211 (sign-up sheet available on office door); phone 1-2647

**Professor's Office Hours:** Tuesday, 3-3:30; Wednesday 3-4:00 p.m., or other times, as noted below

**Questions:** At beginning of each class, the professor asks for questions. At this time, be sure to ask questions about assignments, research, procedures, or content of prior lectures. For government-research, scientific-journal, journal-database questions for your paper assignments, see professional ND (research or govt.-doc) librarians.

**Contact Information:** Please see Dr. Shrader-Frechette during her office hours or after class. For appointments, please sign the sheet on her office door. If none of these appointment times will work, please follow directions on the office door and phone Dr. S-F at 1-2647 to let her know when you are available at 8 am (give 3 options) Tuesday-Wednesday-Thursday. Dr. Shrader-Frechette receives about 100 emails daily, many handled by her assistant . Unfortunately, this high email-volume means she cannot answer student emails. For emergency/sickness contact, use her phone at 1-2647. Be sure to sign up for appointment or contact Dr. Shrader-Frechette about a week ahead of time, as she often is out of town weekly (doing science, ethics, and public-health advising work in Washington, DC – or pro-bono public-health work). Typically, she cannot quickly see those who do not make appointments in advance.

**Course Goals:** to understand relationships among biomedical science, ethical theory, and public health;
to evaluate the ethical and legal assumptions underlying these relationships;
to gain perspectives on how public-health policies-ethics affect our lives and health.

## Course Overview

I. **Severity of PHP:** How Serious Are Public-Health Problems (PHP)?

II. **Causes of PHP:** Why Do Good People Do So Little About Public Health Problems (PHP)?

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| Ignorance about PHP | **Solution**: Read NY Times; Thurs. paper |
| "Science Spin" of Special Interests | **Solution**: Read Kerns, S-F |
| Citizens' Weak Analytical Skills | **Solution**: Master the 5 criteria and fallacies |

III. **Ethical Solutions to PHP**: How Does Logical and Ethical Analysis Help Resolve PHP?

**Solution**: Use Singer, How Are We to Live?
**Solution**: Use 5 criteria; recognize the fallacies

IV. **PHP Issues**: How Does One Resolve Specific PHP? **Solution**: Use ASPH, Ethics and Public Health

**Required Books** (total cost, under $ 90)

1. ASPH (Assn of Schools of Public Health), Ethics and Public Health; available to read or download online, free, at http://www.asph.org/UserFiles/EthicsCurriculum.pdf

2. Kerns, Environmentally Induced Illnesses, available at bookstore or on Amazon for $ 45, or buy used.

3. Shrader-Frechette, Taking Action, Saving Lives; available on website under "Book Manuscript." Use ND id and password, or use 1Kristin for id and password.

4. Singer, How Are We to Live ?, available at bookstore or on Amazon for $ 14.96

5. New York Times subscription (paper copy required), Mon-Fri for 15 weeks = $ 30 Follow directions at http://homedelivery.nytimes.com/HDS/CollegeSearch.do?mode=SearchCollege&who=stud&SELECTED_MENU=24&SELECTED_MENU_PARENT=22. Bring hard copy of NY Times subscription proof with first Tuesday paper, and staple this proof to the article (cut from paper) and to your paper.

**Assignments and Requirements:** For all papers, grammar must be without errors, or students will lose points. For papers P,D,E, be sure that you use (as many as possible) up-to-date scholarly books and articles (e.g., from refereed journals). Although professor is one of the top scholars in the field covered by the course, do not cite her work in these papers. Also, use neither mere website material, nor popular sources, nor sources likely to have some bias (e.g., from industry or citizen-advocacy groups). You may use government documents. Do not use any newspaper sources unless they are absolutely necessary, given the type of paper you are writing. (For instance, paper S7 would require you to use some newspaper citations.) Other assignments and requirements are listed below:

- 3 one-page **class papers**, 1 personal impact (P), 1 science (S), and 1 ethics (E); bring copies for class
- 4 one-page **review papers (R),** of S papers and E papers of persons on your immediate right and left.
- short **quizzes** (Q) Tuesdays, on that week's readings; no tests. At end, top quiz grade will be set = 100.
- watch 1-2 **videos** (V), available at library/De Bartolo and turn in video sheet (from website class materials)
- one-page **overview** (O) of some PHP, due beginning of class, from that week's NY Times.
- classroom **analysis** (A) for each class and attendance at each class

**Grades**

Each item above counts 20 percent, as follows: (P+R), S, E, (Q + V), (O + A).
No assignments, at all, are accepted late, and no incompletes are given, except when students have doctor's note and make prior arrangements, by phone or in person, before the due date. If athletes will be out of town, they should arrange to take quiz or turn in papers early.

## Format for 1-Page (Only) Assignment, Weekly NYT Summaries:

1. Use Oxford University Press formatting-style for New York Times summaries each week, and put this NYT citation at the top of the summary page, e.g., **Gardiner Harris, "Congressional Investigators Are Critical of F.D.A.'s Efforts to Detect Drug Dangers," *The New York Times* CLV, no. 53559 (April 24, 2006): A12.**

2. One-page NYT summaries should have 3 paragraphs. First paragraph should be the longest and should summarize the main points of the article. Second paragraph should explain why the issue covered is a public-health problem. Third paragraph should summarize what you can do to help alleviate this public-health problem.

3. Cut out the NYT article from the news paper; **always staple** it to the back side of your summary.

4. Bring hard copy of NYT subscription proof with first Tuesday paper; staple this proof to the article and your paper.

## Format for 1-Page (Only) Assignment, Paper P (Personal Impacts of P-H Problems):

Discuss an ailment/disease/death of any family member or close friend and show that it might be related to environmental factors; give evidence that the disease, e.g., lung cancer, is caused by some environmental contaminant, e.g., smoking. However, do not use anything connected to smoking, as these ties are well established. Possible diseases might be leukemia, multiple myeloma, thyroid cancer, liver cancer, breast cancer, prostate cancer, brain cancer, non-Hodgkins lymphoma, autoimmune diseases, asthma, ADHD, depression. Follow model below, and be sure to have all 3 parts of paper, as shown below, and at least 3 references from recent, first-rate scientific journals (or recognized medical authorities or government, e.g., EPA , if journal literature is not available). Use no mere web data, and put references in standard scientific format, as in model-paper by ND student Kate Distler. Do not pad the bibliography, and use only references that you cite in text. Do not make claims that you cannot back up with citations, and give several reasons for your claims. Rewrite the paper several times to be sure it is logical, clear, well argued, and grammatical. Be sure to use correct citation format, as in model paper.

## Format for 1-Page (Only) Assignment, Paper S (Scientific Issue Re P-H Problems):

From subsequent pages of syllabus, choose which S paper topic you would most like, and follow model below. (Before Friday noon of this week, put 3 priority-ranked S topics in box by professor's door at 211 Malloy. If you have another topic you would like, propose it to professor at the same time.) When you do the paper, be sure to have all 3 parts of paper (thesis, at least 5 arguments, at least 5 items in bibliography). Follow model below, and be sure to use recent, first-rate scientific journals (or recognized medical authorities or government, e.g., EPA , if journal literature is not available). Use no mere web data, and put references in standard scientific format, as in model-paper by ND student John Ray. Do not pad the bibliography, and use only references that you cite in text. Do not make claims that you cannot back up with citations, and give several reasons for your claims. Rewrite the paper several times to be sure it is logical, clear, well argued, and grammatical. Be sure to use correct citation format, as in model paper.

## Format for 1-Page (Only) Assignment, Paper E (Ethical Issue Re P-H Problems):

This paper is like paper S in format, but its content should be largely ethical, rather than scientific. There is much ethics material in the Kerns, Singer, Shrader-Frechette, and ASPH course readings. From subsequent pages of syllabus, choose which E paper topic you would most like, and follow model below. (Before Friday noon of this week, put 4 priority-ranked E topics in box by professor's door at 211 Malloy (2 Singer chapters, pro or con; plus 2 other E topics). If you have another topic you would like, propose it to professor at the same time.) When you do the paper, be sure to have all 3 parts of paper (thesis, at least 5 arguments, at least 5 items in bibliography). References should be from recent, first-rate ethical and scientific journals/books (or recognized government sources, and recognized medical authorities if no journal data are available). Use no mere web data, and put references in standard format, as in model-paper. Do not pad the bibliography, and use only references that you cite in text. Do not make claims that you cannot back up with citations, and give several reasons for your claims. Rewrite the paper several times to be sure it is logical, clear, well argued, and grammatical. Be sure to use correct citation format, as in model paper.

## Format for 1-Page (Only) Assignment, Paper R (Review):

4 one-page **review papers (R),** of S and E papers of persons on your immediate right and left, are due at class on same day as the person's S and E papers are due. Bring copy for professor and for person being evaluated. Each of these 4 papers must have least 6 sentences (3 positive, 3 constructive criticism), assessing the paper. Each sentence must be of the form: "A is B because C." Sample positive sentence: "Mary Smith's paper is convincing because she uses citations from the very top scientific journals, like Science, Nature, and Environmental Health Perspectives." Sample constructive-criticism sentence: "Joe Brown's second argument is weak because, although Joe seems possibly correct to argue that his grandmother's breast cancer occurred because of her taking menopausal hormones, Joe does not systematically eliminate other likely causes of her cancer, such as family history or genetics." People whose papers are being evaluated should send their two evaluators final email copies of their papers no later than 48 hours prior to class beginning. If authors do not send paper to evaluators in time, evaluators should let professor know this fact.

**Extra-Credit Papers:** Must be of form S or E. Select new topic, in connection with professor, before fall break. Papers are due at first class after Easter. In grading, paper will receive same weight as other P, S, and E papers.

## Assignment S (Scientific Controversy): Choose-Rank 3 of the topics below:

(Assignments are "first come, first served"! Note that "con" papers are much easier to do than the "pro" papers because, if you support a person/position, you must find reasons that are not already used by the person to support his/her position – i.e., you must provide original, new arguments for agreeing with the person. If you are "con," you need only show that/why a claim is doubtful.)

S1. Dr. Elizabeth Whelan, President of the American Council on Science and Health (ACSH), in a 12-29-04 article, says one of the "Great Unfounded Health Scares of 2004" is that "mercury in seafood threatens health." Is she right? Why or why not?

S2. Dr. Elizabeth Whelan, President of the American Council on Science and Health, in a 12-29-04 article, says one of the "Great Unfounded Health Scares of 2004" is that "farmed salmon causes cancer" because of its higher levels of PCBs. Is she right? Why or why not?

S3. Dr. Elizabeth Whelan, President of the American Council on Science and Health, in a 12-29-04 article, says one of the "Great Unfounded Health Scares of 2004" is that "Teflon causes health problems." Is she right? Why or why not?

S4. Dr. Elizabeth Whelan, President of the American Council on Science and Health, in a 12-29-04 article, says one of the "Great Unfounded Health Scares of 2004" is that "cell phones cause brain tumors." Is she right? Why or why not?

S5. Dr. Elizabeth Whelan, President of the American Council on Science and Health, in a 12-29-04 article (http://www.aboutmytalk.com/t175703/s&.html), says one of the "Great Unfounded Health Scares of 2004" is that thimerisol- and mercury-containing "childhood vaccines cause autism." Is she right? Why or why not?

S6. In 1994, the Natural Resources Defense Council was given a "Pinocchio Prevaricator's Award by the ACSH for spreading false information about the health hazards to children of the pesticide Alar. Was the award deserved?

S7. On August 15,1991, New York Times Science writer K. Schneider ran a piece titled "US Officials Say Dangers of Dioxins Were Exaggerated." Were the piece and its title accurate and likely not to mislead?

S8. Dr. Devra Davis, Carnegie Mellon University epidemiologist says that environmental estrogens, including chlorine compounds, are partly responsible for the increase in breast cancer. Is she right? Why or why not?

S9. Does the much higher incidence of breast cancer on Long Island likely have environmental causes?

S 10. New York Times science writer Richard Severo, nominated four times for Pulitzer Prizes, charged that he was reassigned to a lesser job because he offended corporate sensibilities with his articles, especially those on GE pollution of the Hudson River. Was he right?

S11. New York Times science writer K. Schneider ran pieces on US Superfund sites that MIT's Mark Dowie says were biased against the environment and not adequately factual. Who is right?

S12. New York Times science writer Richard Severo, nominated four times for Pulitzer Prizes, said he was reassigned to a lesser job because he documented Dupont's genetic testing on its African-American employees. Was he right?

S 13. New York Times science writer Philip Hilts said he was reassigned because he wrote about 80 stories on tobacco and showed how the industry, especially Philip Morris, covered up the health effects of smoking. Was he right?

S14. MIT's Mark Dowie has charged that New York Times Science writer Gina Kolata has a pro-corporate/anti public-health bias, as revealed in her stories on food irradiation. Who is right?

S15. MIT's Mark Dowie has charged that New York Times Science writer Gina Kolata has a pro-corporate/anti public-health bias, as revealed in her stories on environmental hormones. Who is right?

## Assignment E (Ethics Controversy): Choose/Rank 4 topics below, 2 Singer, 2 Other:

(Assignments are "first come, first served"! Note that "con" papers are much easier to do than the "pro" papers because, if you support a person/position, you must find reasons that are not already used by the person to support his/her position – you must provide original, new arguments for agreeing with the person. If you are "con," you need only show why a claim is doubtful.)

Evaluate Singer in chs. 2, 3, 4, 7, 8, 9, 10, 11. Choose/rank 2 chapters; tell whether you want pro or con in each.

Choose any two of the following topics below, E 2.1 through E 9.2, provided they are listed on syllabus dates later:

E 2.1 **Consent**: Should medical experiments on children be allowed, provided their parents consent?

E 2.2. **Consent**: for national security reasons, should biological and chemical warfare experiments continue on military personnel who volunteer to take part in them, as occurred with A-bomb testing, provided military personnel receive full and perpetual health coverage?

E 3.1 **Equal Protection**: Do especially sensitive people deserve the same level of protection from pollutants that average people receive, so that their risks are the same? If so, how might sensitive people be compensated?

E 3.2 **Equal Protection**: Is the WTO correct to allow pesticides banned in the US to be imported from other nations, into the US, on food ?

E 4.1 **Due Process and Fair Play**: Should citizens who serve on governmental public-health/environment-related boards or advisory groups receive full compensation for their time and expenses?

E4.2 **Conflicts of Interest**: Should scientists/medical doctors who serve on federal science-advisory boards that make recommendations about regulations and policy be required to declare to the public all their income and consulting monbies over $5000 each year?

E 4.3 **Autonomy/Freedom**: Should US patients, who are terminally ill, have the right to choose to try whatever untested therapies they wish?

E 5.1 **Privacy**: Did government biological-weapons research plausibly play any role in the outbreak or spread of (the infectious) Lyme Disease ?

E 5.2 **Rights to Know**: Should all US cattle be tested for Mad Cow Disease, as they are in some other nations?

E 6.1 **Preventing Harm**: Should all illegal drugs be legalized, as in the Netherlands, and should the government provide maintenance drugs, so as to prevent drug-related crime and help care for the addicts?

E 6.2 **Preventing Harm**: Should all medical students be required to take 4 courses – in prevention, occupational illness, environmental illness, and nutrition – as part of their education?

E 6.3 **Rights to Know**: Should the names and addresses of convicted child molesters, once they are released from prison, be available to all, in order to protect potential victims?

E 6.4. **Rights to Know**: Are current government rules, allowing polluters not to meet community right-to-know provisions, given National Security and terrorist threats, ethically defensible?

E 7.1 **Equal Protection**: Is the "Clear Skies" air-pollution plan ethically defensible on grounds of equity?

E 7.2 **Equal Protection**: Do 2005 and 2006 federal EPA budget cuts put some Americans at unequal risk from environmental injustice?

E 7.3 **Protection of the Vulnerable**: Should all US occupational-health standards be as strict as those in the strictest European countries?

E 7.4 **Protection of the Vulnerable**: Should pregnant women be kept from hazardous workplaces, as many chemical companies do and as some nuclear industries tried to do?

E 8.1 **: Autonomy**: Should employers have the right to perform genetic screening of all potential employees?

E 8.2 **Paternalism**: Should genetically susceptible individuals be kept from hazardous workplaces, as many chemical companies do and as the Navy did in its nuclear submarine program?

E 9.1 **Human Rights**: Do all people have the same right to breathe clean air and drink clean water, as the UN says, regardless of where they live in the US?

E 9.2 **Human Rights**: Should the US have single-payer, universal health care for all, so that wealthier people can purchase additional care if they wish?

## ABOUT THE PROFESSOR

Kristin Shrader-Frechette has degrees in mathematics and in philosophy and has done 3 post-docs, one in hydrogeology, one in economics, and one in population biology/community ecology. Author of 350 professional papers and 14 books, her work has been translated into 11 languages and has appeared in science journals such as Science, BioScience, Health Physics and Quarterly Review of Biology, as well as in philosophy journals such as Ethics, Philosophy of Science, and Journal of Philosophy. Her latest book is Environmental Justice: Creating Equality, Reclaiming Democracy. Shrader-Frechette has done environmental justice work in the Americas, Europe, Africa, and throughout the US. She had addressed the national academies of science in 3 nations and advised various foreign and US governments, the UN, and the WHO on issues of quantitative risk assessment and nuclear waste disposal. Shrader-Frechette is a member of the US EPA Science Advisory Board and Chair of the US Bioethics Committee of the US EPA. She also has served on many committees and boards of the US National Academy of Sciences, the UN, the WHO, and the International Commission on Radiological Protection. Her research has been funded continuously by NSF since 1982, and she is Past President of the Risk Assessment and Policy Association and the International Society for Environmental Ethics. Shrader-Frechette was asked by the Association of Schools of Public Health to write 2 of the chapters of its recommended curriculum on ethics – that on environmental health and that on occupational health, because her work is well known in both areas. Her husband is a software engineer and mathematician. Their children have just graduated from Princeton. All are avid scuba divers, runners, and kayakers. See her website at www.nd.edu/~kshrader.

**Assignment P (Personal-Impact Paper)** **[SAMPLE PAPER P]**
Kate Distler

**1. What Happened to the Family Member or Friend:** My grandmother was diagnosed with Alzheimer's disease (AD) five years ago at the age of 76. Her AD has progressed since diagnosis. She now has moderate or mid-stage AD (stage 5 out of 7).

**2. What May Have Caused What Happened:** At least six reasons suggest that my grandmother's AD is related to occupational pesticide exposure as a florist.

First, there is strong evidence that vascular risk factors such as heart disease, stroke, diabetes and smoking are risk factors for AD (Luchsinger et al 2005). My grandmother, however, fits none of these factors.

Second, there is evidence that a history of dementia in siblings and/or parents is also a risk factor for AD (Brown 2005). Yet there is no family history of dementia, neurological disease or AD in my grandmother's family.

Third, numerous studies have found that environmental factors are also risk factors for AD (Gatz et al 2005; Brown 2005; Landrigan et al 2005). Because my grandmother is otherwise healthy and because her AD does not appear to be genetic, it follows that my grandmother might have developed AD because of environmental causes.

Fourth, links have been established between cumulative exposures to pesticides and the development of neurological diseases, particularly Parkinson's disease and AD (Baldi 2003).

Fifth, in 1979, 350 million cut flowers were imported into the United States for use in florist shops. These flowers were imported with strict regulations on pests and plant diseases, but without regulations on pesticides. As a result, imported flowers often underwent heavy pesticide applications prior to shipment. Many of these pesticides were fat-soluble and could be absorbed through the skin. My grandmother, working as a florist from 1965-1982, handled many imported flowers and could have been exposed to exceptional levels of pesticides. (Morse et al 1979).

Sixth, recently, specific pesticides (organophosphates and carbamates) have been closely linked with AD (Brown 2005). In 1979 (again when my grandmother was working as a florist) ten florists were found to have organophosphate poisoning due to occupational exposure to organophosphate pesticides (Morse et al 1979). This suggests that many florists at that time, including my grandmother, were not only exposed to pesticides but to organophosphates in particular. As a florist for seventeen years, my grandmother was likely exposed to cumulative levels of organophosphates that could have reasonably contributed to her AD.

**3. Bibliography**

Baldi, I., Lebailly, P., Mohammed-Brahim, B., Letenneur, L., Dartigues, J., and Brochard, P. 2003. Neurodegenerative diseases and exposure to pesticides in the elderly. **American Journal of Epidemiology** 157 (5): 409-416.

Brown, R., Lockwood, A., and Sonawane, B. 2005. Neurodegenerative diseases: an overview of environmental risk factors. **Environmental Health Perspectives** 113 (9): 1250-1256.

Gatz, M., Fratiglioni, L., Johansson, B., Berg, S., Mortimer, J., Reynolds, C., Fiske, A. and Pedersen, N. 2005. Complete ascertainment of dementia in the Swedish Twin Registry. **Neurobiology of Aging** 26 (4): 439-447.

Landrigan, P., Sonawane, B., Butler, R., Trasande, L., Callan, R., and Droller, D. 2005. Early environmental origins of neurodegenerative disease in later life. **Environmental Health Perspectives** 113 (9): 1230-1235.

Luchsinger J., Reitz C., Honig L., Tang M., Shea S., and Mayeux R. 2005. Aggregation of vascular risk factors and risk of incident Alzheimer disease. **Neurology** 65 (4): 545-551.

Morse, D., Baker, E., and Landrigan, P. 1979. Cut flowers: a potential pesticide hazard. **American Journal of Public Health** 69 (1): 53-57.

# Sample Assignment P (Personal-Impact Paper)

**1. What Happened to the Family Member or Friend:** My mother died at age 43 of bone cancer, multiple myeloma.

**2. What May Have Caused What Happened:** At least 6 reasons suggest that my mother likely died of multiple myeloma (MM) because of unnecessary x-rays. Because she was a tiny woman, during each of 6 pregnancies her obstetrician x-rayed her pelvis to see if the child's head could pass through the birth canal.

First, MM tends to be a disease of blacks, of men, of those about age 70, and those exposed either to ionizing radiation or to petrochemical pollutants (Sorahan 2005; MayoClinic 2005), and my mother fits none of these risk factors except for the radiation exposures.

Second, MM is very well documented as being caused by workers' exposures to high or repeated doses of ionizing radiation – whose effects are cumulative and additive (Gluzman 2005) – and by soldiers' exposures to nuclear-weapons test fallout (Muirhead 2004), and my mother's doses were of the same levels as these workers and soldiers (Nussbaum et al 1990).

Third, MM is a relatively rare cancer, occurring in only about 1 percent of all cancers (Ashcroft 2003), and the rarity also suggests there must be something unusual – like repeated radiation exposures when she was in her twenties, that contributed to it.

Fourth, there is no family history of cancer, including MM, and my mother was a healthy, well educated, highly athletic woman who never worked outside the home except for teaching for several years – all of which suggests that diet and lifestyle likely did not contribute to the MM.

Fifth, the MM appeared first in her pelvis, precisely where she was X-rayed repeatedly.

Sixth, the MM appeared about 25 years after first exposure, consistent with MM's latency period (Muirhead 2004).

## 3. Bibliography


Ashcroft, A. 2003. Aetiology of bone disease and the role of bisphosphonates in multiple myeloma. **Lancet Oncology** 4 (5): 284-92.

Gluzman, D. 2005. Malignant diseases of hematopoietic and lymphoid tissues in Chernobyl clean-up workers. **Hematology Journal** 5 (7): 565-71.

Mayo Clinic Staff. 2003. Multiple myeloma, risk factors; accessed 5-31-05 at http://www.mayoclinic.com/invoke.cfm?objectid=214BA123-97CC-4F97-89A1344C33E12F05&dsection=4

Muirhead C. 2004. Epidemiological studies of UK test veterans: II. Mortality and cancer incidence. **Journal of Radiological Protection** 24 (3): 219-41.

Nussbaum, R., Belsey, R., and Koehnlein, W. 1990. Recent mortality statistics for distally exposed A-bomb survivors. **Medicina Nuclearis** 2 (1): 163-174.

Sorahan, T. 2005. Cancer risks in a historical UK cohort of benzene exposed workers. **Occupational and Environmental Medicine** 62 (4): 231-6.

## Sample Paper E: Should the US pay for screening/treating all citizens for thyroid disease, since above-ground US nuclear-weapons testing has caused some of this disease?

**Thesis:** At least 6 ethical reasons suggest the US should, at least, pay for thyroid screening/treatment for all females who were ages 1-18 any time between 1953-1962, the time of the 200+ above-ground nuclear weapons' tests, because the US likely is responsible for their ailments.

1. Because thyroid ailments of females who fit these criteria are, more likely than not, caused by US tests (ACERER 1998); the government knew the harm the tests would cause and suppressed it (ACERER 1998, p. 10); and people bear responsibility for their harm (Beauchamp and Childress 1993, pp. 387-388), government should pay for this.

2. Because the government lied, violating citizens' rights to know about the effects of the tests (Shrader-Frechette 2004), and because such lies increase duties of compensation to victims (Beauchamp and Childress 1993, pp. 307-316), the government should pay for screening/treatment for those in this group.

3. Because government delayed releasing the NCI (1997) fallout report for more than 10 years (Hoffman 1998, pp. 421-439), causing fallout victims to be outside the 6-year statute of limitations, so that citizens were deprived of their due-process rights, government should pay to screen/treat this group (Shrader-Frechette 2004).

4. The objection, that the expense of the screening/treatment prohibits it (IOM/NAS 1998, p. ES-3), fails because government could screen only those females roughly 45-55 years old, since government bears greatest responsibility for these ailments (Beauchamp and Childress 1993, pp. 343-344 ), and this group needs the most protection.

5. The objection, that screening/treatment has minimal benefits since thyroid disease is rarely fatal (IOM/NAS 1998), fails because thyroid-disease can induce devastating depression, for example, and those without health insurance deserve equal treatment (Beauchamp and Childress 1993, pp. 257-274).

6. The objection, that screening would cause greater harm – false alarm in healthy citizens (IOM/NAS 1998), is ethically flawed in ignoring rights to know and to compensation, and it falsely assumes the IOM has the right to make paternalistic decisions, even when people have been treated unfairly (Mill 1910).

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Advisory Committee for Energy-Related Epidemiologic Research (ACERER), HHS 1998. **Resolution with Regard to Exposures of the American People to Fallout from the Nevada Test Site**. Washington, DC, ACERER.

Beauchamp T., Childress J. 1993. **Principles of Biomedical Ethics**. New York: Oxford University Press.

Hoffman, O. 1998 "Statement," in US Congress 1998. **National Cancer Institute's Management of Radiation Studies**. Washington, DC, US Government Printing Office, pp. 421-439.

Institute of Medicine (IOM) 1998. **Exposure of the American People to Iodine 131 from Nevada Nuclear-Bomb Tests,** Washington, DC, National Academy Press.

Mill, J. S. 1910. **Utilitarianism, On Liberty, and Representative Government**. New York, Dutton.

National Cancer Institute (NCI). 1997. **Estimated Exposures and Thyroid Doses Received by the American People from Iodine-131 in Fallout Following Nevada Atmospheric Nuclear Bomb Tests**, NIH Publication 97-4264, Washington, DC, National Institutes of Health.

Shrader-Frechette, K. 2004. Comparativist rationality and epidemiological epidemiology. **Topoi** 23 (1): 153-163.

**MIT's Mark Dowie has charged that *New York Times* Science writer, Gina Kolata, has a pro-corporate / anti-public health bias, as revealed in her stories on breast implants. Who is right?**

**Thesis**: In at least five *New York Times* articles concerning silicone breast implants, Gina Kolata either ignores or minimizes corporate misconduct or serious public-health concerns, supporting Mark Dowie's charge that Kolata is biased.

1. Gina Kolata's September 18, 1995 *New York Times* article states that silicone-breast-implant manufacturers "agreed to a class action settlement for women who had implants" because they were "faced with a growing number of lawsuits." But Kolata did not mention that the manufacturers were losing such lawsuits because juries were finding (i) that silicone-breast implants were causing the serious illnesses and injuries alleged and (ii) that some implant manufacturers had affirmatively concealed the adverse results of animal testing (Dow Chemical Co. v. Mahlum).

2. Gina Kolata's September 18, 1995 *New York Times* article states that "recent studies have found no link between the implants and serious diseases . . . and many doctors believe they are safe." But Kolata did not mention numerous authorities and studies finding (i) that silicone is toxic in both animals and man (Busch 1994); (ii) that women with silicone-breast implants are at higher risk of developing cancer from killer-cell suppression (Campbell 1994); and (iii) that autoantibodies linked to autoimmune symptoms were found in 5% -30% of women with silicone-breast implants (Bridges 1993).

3. Gina Kolata's October 11, 2003 *New York Times* article states that implant manufacturers were "forced" to compensate women "who the implant makers argued were never sickened by the devices in the first place." But Kolata does not mention the hundreds of women with breast implants who reported symptoms of chronic fatigue (77%), cognitive dysfunction (65%), severe joint pain (56%), dry mouth (53%), dry eye (50%), hair loss (40%), and difficulty in swallowing (35%) post-implant surgery (Solomon G 1994).

4. Gina Kolata's October 19, 2003 *New York Times* article states that "most of the [F.D.A. Advisory Panel's] scientists agree that implants have not been linked to a risk of systemic diseases like cancer, lupus or chronic fatigue, or neurological problems." But Kolata does not cite the many studies showing that silicone-associated symptoms go away when the silicone implants are removed (Robinson 1995 and Cuellar 1995).

5. Gina Kolata's January 9, 2004 *New York Times* article mentions an Institute of Medicine report that found "no conclusive evidence linking the implants to serious diseases;" but Kolata mentions neither many other reports to the contrary, nor the Institute of Medicine's finding of "relatively high frequency of local complications that are unique to women with silicone implants" (IOM 1999).

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## Sample Science (S) paper: Were US citizens harmed by exposure to Iodine from US nuclear weapons tests?

**Thesis:** At least 6 reasons suggest many US citizens, especially children, were harmed by the nuclear tests.

1. Many US children were harmed – especially women about 45-55 old and those who drank milk from backyard cows/goats – because such doses induce thyroid disease; many received lethal radiation doses, above160 rads (IOM 1998, p. 42); 3.5 million US children received doses 50 times above annual background; and all doses are risky (US Congress 1998, pp. 421-439).

2. Although the National Academy of Sciences (IOM 1998) and National Cancer Institute (NCI 1997) minimize fallout-caused cancers, they underestimate them because they calculated only average risk from fallout, ignored the higher risks to children and to the medically sensitive 25 % of the population, ignored all non-cancer thyroid diseases/ deaths, and all effects not caused by I-131 (NCI 1999, pp. B-8 through B-29; Shrader-Frechette 2004).

3. Objectors say average fallout risk was low (IOM 1998), but other groups, like Physicians for Social Responsibility (Rush and Geiger 1997-1998, pp. 1-2), say I-131 cancers are 600-700 % higher than IOM says, and MIT scientists estimate global, US-fallout-caused fatal cancers at one million (Makhijani, Hu, Yi 1995).

5. Although objectors claim that I-131 fallout likely caused only several hundred thousand additional cancers, even IOM (1998, p. ES-2) says I-131 doses were "too uncertain" to be used in estimating risk (IOM 1998, p. ES-2); as a result, the I-131 risks are at best uncertain, not low.

6. Objectors say fallout had no obvious effects, but this ignores statistically significant increases in childhood leukemias and other cancers (US Congress 1998) and the fact that test-era radiation-risk estimates have been shown to be massive underestimates (Abbott and Barker 1996).

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Abbott A, Barker S. 1996. Chernobyl damage underestimated. **Nature** 380 (6576): 658-659.

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# FALL 2006, OUTLINE OF LECTURES AND ASSIGNMENTS

| Date | Section of Course | Lecture | Assignment Due Today |
|---|---|---|---|
| 8-22 | **What Are PHP?** | (1) Overview of Course<br>(2) ASPH, ch. 1: Public-Health Ethics | (1) Get NYT paper subscription;<br>(2) Read ch. 1, ASPH; watch video early. |
| 8-29 | " | (1) Lives at Risk from Envir. Toxins<br>(2) Tools of Analysis: Fallacies<br>(3) Tools of Analysis: 5 Criteria | (1) Read ch. 1, S-F; turn in paper P<br>(2) By noon 1-26, put priority list of 3 S & 4 E topics in prof's box, 211 Malloy |
| 9-5 | " | (1) Analysis of Ames and Gold<br>(2) Analysis of Epstein<br>(3) First half of class do paper P | (1) Read/analyze Ames and Gold, Epstein, on website at class materials<br>(2) Watch "Trade Secrets" video (Hesburgh Library, 2 fl.); answer video sheet on web |
| 9-12 | " | (1) Environmentally Induced Illness<br>(2) Tools of Analysis: Review<br>(3) Second half of class do paper P | (1) Read Kerns, pp. 5-77, 278-81<br>(2) Turn in "Trade Secrets" video sheet |
| 9-19 | **Why People Do Not See PHP** | (1) Information Suppression & Spin: Threats to Rights to Know, to Consent<br>(2) Video: "Coverup at Ground Zero" ? | (1) Read ch. 2, S-F; watch next video early<br>(2) Read Kerns, pp. 214-30 |
| 9-26 | " | (1) Private-Interest Science: Life Threats<br>(2) First one-third of class do paper S | (1) Read ch. 3, S-F, Kerns, pp.230-7, 91-110<br>(2) Turn in Paper S |
| 10-3 | **Ethical Solutions** | (1) The Responsibility Argument<br>(2) Second 1/3 of class do paper S | (1) Read chs. 4-5, S-F<br>(2) Objections to Responsibility Argument |
| 10-10 | " | (1) Answering Attacks on Rights<br>(2) Third 1/3 of class do paper S | (1) Watch "A Plague on...Children"<br>(2) Turn in video sheet; read Kerns pp. 111-147. |
| 10-17 | | **FALL BREAK** | |
| 10-24 | " | (1) Avoiding egoism, materialism<br>(2) E3.1 _____<br>E3.2 _____<br>E4.2 _____ | (1) Read Singer, chs. 2-4<br>Singer, 2 (pro)_____<br>Singer, 2 (con)_____<br>Singer, 3 (pro) _____<br>Singer, 3 (con) _____<br>Singer, 4 (pro) _____<br>Singer, 4 (con) _____ |

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| 10-31 | **Ethical Solutions**, continued | (1)<br>(2) | Self-interest = altruism<br>E7.1 _____<br><br><br>E7.2 _____ | (1) Read Singer, chs. 7-9<br>Singer, 7 (pro)_____<br>Singer, 7 (con)_____<br>Singer, 8 (pro)_____<br>Singer, 8 (con)_____<br>Singer, 9 (pro)_____<br>Singer, 9 (con)_____ |
| 11-7 | " | (1)<br>(2) | Purposeful Lives<br>Singer Critique | (1) Read Singer, chs. 10-11<br>Singer, 10 (pro)_____<br>Singer, 10 (con)_____<br>Singer, 11 (pro)_____<br>Singer, 11 (con)_____ |

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| 11-14 | **PH Issues** | (1) Tuskegee & 3rd-World Experiments | | (1) Read ASPH, chs. 2-3 |
| | | (2) E2.1 _____ | | |
| | | E2.2 _____ | | |
| 11-21 | | No Class: 2 outside videos make up for this class. | | |
| 11-28 | " | (1) | Privacy and Prevention | (1) Read ASPH, chs. 5,6 |
| | | (2) | E6.1 _____ | |
| | | | E6.2 _____ | |
| | | | E6.3 _____ | |
| 11-28 | " | (1) | Environ/Occupational Health | (1) Read ASPH, ch. 7 |
| | | (2) | E5.2 _____ | Read Kerns, pp. 154-206 |
| | | | E6.4 _____ | |
| | | | E7.3_____ | |
| 12-5 | " | (1) | Reforming Public Health | (1) Read ASPH, ch. 9, S-F, ch. 6 |
| | | (2) | E9.1 _____ | |
| | | | E9.2 _____ | |