

mind•full: a brainsnack for future leaders with ethical appetites

Volume II • Number One • September 1997 • Student Pugwash USA

the pugwash conferences

Nuclear weapons threaten the very existence of humankind. It is time to renounce war. This is the central message of a 1955 appeal signed by Albert Einstein, Bertrand Russell, and nine other eminent scientists and scholars who believed that scientists have a social responsibility. Known as the Russell-Einstein Manifesto, this document became the rallying cry for a new movement. Heeding the Manifesto's challenge, "We have to learn to think in a new way," an international group of scientists gathered in Pugwash, Nova Scotia, in 1957 to discuss their role in the nuclear era. They created the Nobel Peace Prize winning organization, the Pugwash Conferences on Science and World Affairs.

In the years since the first meeting, Pugwash has broadened its agenda. In addition to exploring ways to eliminate nuclear weapons and abolish war, Pugwash also tackles issues such as chemical and biological weapons, climate change, development, scientific responsibility, ethnic conflict, environmental degradation, and conventional arms control. Pugwash explores how to use science "not for warfare, but for the welfare of the human race," according to former Pugwash president Hannes Alfvén.

During the Cold War, Pugwash was often the only forum in which scientists from East and West could meet. These discussions often filtered quickly into the highest levels of government and led to breakthroughs on many important arms control treaties and international problems. Critics have questioned whether Pugwash was a "dupe" of the two superpowers during the Cold War. Others have called Pugwash an elitist organization. Despite such charges, Pugwash continues to provide a unique forum in which participants hammer out thorny aspects of critical global issues. Pugwash has involved young people in its discussions since 1970. The first Student Pugwash group began in the USA in 1979.

The mission of Student Pugwash USA is to promote the socially responsible application of science and technology in the 21st century. As a student organization, Student Pugwash USA encourages young people to examine the ethical, social, and global implications of science and technology, and to make these concerns a guiding focus of their academic and professional endeavors.

The **mind•full** series encourages readers to explore crucial ethical dilemmas associated with the application of science and technology.

STUDENT



PUGWASH

U S A

go figure!

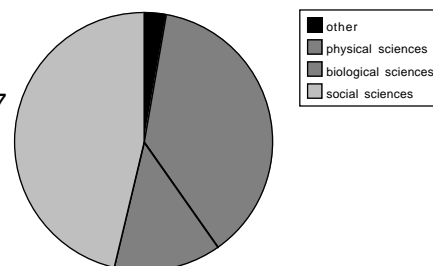
It is difficult to quantify the impact of Pugwash. However, looking at some of the numbers involved can give one a broad sense of its reach. Pugwash made a decision in its early years to count each person who attends a Pugwash meeting as a "Pugwashite," and chose not to establish formal membership. Instead, a council and an executive committee are elected every five years. These are the only groups empowered to speak for the organization. There are four main offices in Geneva, London, Rome, and Cambridge, Massachusetts. The secretary-general, Professor George Rathjens, has overall executive responsibility. In addition, there are approximately 40 national Pugwash groups in various countries and about a dozen student and young Pugwash groups around the world.

the stats

- 10,946 "attendances" at Pugwash meetings, 1957-1997
- 3,360 Pugwashites since the beginning of Pugwash
- 234 women Pugwashites over four decades
- 229 conferences, workshops, and symposia in 40 years
- 163 people at each annual Pugwash Conference, 1992-1997
- 78 students from 15 countries at Pugwash meetings, 1992-1997
- 38 national Pugwash groups
- 33 people at each Pugwash symposia or workshop, 1992-1997
- 26 members of the current Pugwash Council
- 23 student Pugwashites who later attended as "senior Pugs"
- 12 or more Student Pugwash groups worldwide
- 10 people on the Pugwash Executive Committee
- 4 main offices
- 1 Nobel Peace Prize

Source: Joseph Rotblat, "The Eighth Pugwash Quinquennium, 1992-1997: Fifth Supplement to the History of the Pugwash Conferences," *Pugwash Newsletter*, Vol. 34, No. 2, July 1997.

pugwashites, by field 1992-1997



field	percentage
other	2.9
physical sciences	37.5
biological sciences	13.1
social sciences	46.5

who's who

pugwash council, 1997-2002

Professor Francesco Calogero (chair)*•; Professor Ulrich Albrecht; Sir Michael Atiyah*; Professor Gabriel Baramki; Ambassador Julio Carasales; Professor Ana Maria Cetto (chair, executive committee)*; Lt.-Gen. Emmanuel Erskine*; Dr. Esmat Ezz; Academician Vitalii I. Goldanskii*; Maj.-Gen. Leonard Johnson; Dr. Venance Journé*; Dr. Martin Kaplan•; Professor Michiji Konuma; Mr. Sverre Lodgaard; Dr. Steven Miller; Professor Marie Muller; Professor Maciej Nalecz*; Dr. Alexander Nikitin; Professor Amnon Pazy; Dr. Sebastian Pease; Professor George Rathjens*; Dr. Luiz Pinguelli Rosa; Professor Joseph Rotblat*•; Air Commodore Jasjit Singh*; Dr. Mark Byung-Moon Suh; Professor Zhuang Fenggan. (* = member of the Pugwash executive committee; • = former secretary-general)

president

Sir Michael Atiyah, OM, FRS, is a world-renowned mathematician. From 1990-1997, he served as master of Trinity College, Cambridge. He received the prestigious Fields Medal in 1966.

secretary-general

Professor George Rathjens, a chemist by training, is professor emeritus of political science at the Massachusetts Institute of Technology. He has held many positions in the US government on defense and arms control.

in control or out of it ?

Pugwash scientists and scholars have played a role in some of this century's most important arms control and disarmament measures. They have also helped create other nongovernmental initiatives that contribute to increased international understanding. Their impact has ranged from guiding major international arms control treaties to providing a forum in which people from divergent perspectives could discuss solutions to challenging international conflicts.

From its very beginning, Pugwash sought to curb and reverse the nuclear weapons arms race. Nuclear testing and nonproliferation have always been major areas where the expertise of Pugwash scientists has often led to breakthroughs in negotiations. For example, discussions at Pugwash conferences, particularly on questions of verification and inspection, eventually led to the 1963 Partial Test Ban Treaty and the 1996 Comprehensive Test Ban Treaty. Likewise, many of the provisions of the 1968 nuclear Non-Proliferation Treaty were explored and strengthened as a result of discussions at Pugwash meetings.

In addition, many people credit Pugwashites for working out several aspects of other major treaties, including the 1972 Anti-Ballistic Missile Treaty, the 1987 Intermediate-Range Nuclear Forces Treaty, nuclear-weapons-free zones, and other key efforts to halt the spread of nuclear weapons. The Pugwash book, *A Nuclear-Weapon-Free World: Desirable? Feasible?*, led to the Australian government's establishment of the international Canberra Commission, which issued a ground-breaking report calling for the elimination of nuclear weapons. Pugwash's former president and founder, Professor Joseph Rotblat served on the Commission.

Pugwash began discussing biological weapons in 1959. Its efforts in cooperation with the Stockholm International Peace

nerds' words

Pugwash—a small fishing village in Nova Scotia, home of the first Pugwash Conference in 1957. Cyrus Eaton, one of Pugwash's early benefactors, lived there.

Pugwashite—a person who has attended a Pugwash meeting.

Quinquennial Conference—a special Pugwash Conference held every fifth year at which Pugwashites elect a new council (1997 is the year of a quinquennial conference).

Russell-Einstein Manifesto—1955 document that led to the formation of the Pugwash Conferences.

Secretary-General—the executive director of Pugwash.

Senior Pug—slang used by Student Pugs to refer to Pugwashites.

Student/Young Pugwash—a national group that involves students and/or young professionals.

Source: Student Pugwash USA.

nobility

"The Norwegian Nobel Committee has decided to award the Nobel Peace Prize for 1995, in two equal parts, to Joseph Rotblat and to the Pugwash Conferences on Science and World Affairs, for their efforts to diminish the part played by nuclear arms in international politics and in the longer run to eliminate such arms. . . . It is the Committee's hope that the award of the Nobel Peace Prize for 1995 to Rotblat and to Pugwash will encourage world leaders to intensify their efforts to rid the world of nuclear weapons."

Source: The Norwegian Nobel Institute, communiqué, October 13, 1995.

Research Institute facilitated the 1972 Biological Weapons Convention. In addition, a Pugwash study group on chemical weapons contributed to the 1993 Chemical Weapons Convention. Pugwash contacts facilitated the first access of a US expert to the disputed anthrax outbreak in Sverdlovsk in 1979. Pugwash also has discussed the conventional arms trade and technology transfer. For example, a 1974 working group discussed a code of conduct on technology transfer.

Lesser-known, but still important, discussions on regional crises also have had an impact. For example, a series of meetings led to a mission of French scientists going to Hanoi in 1967 with a message from the US government that conveyed an offer to negotiate a peaceful resolution of the Vietnam War. Involving discussions at the highest levels, some say this mission came close to saving thousands of lives. In addition, Pugwash has frequently discussed other regional conflicts, including the Middle East, Czechoslovakia, Berlin, Rhodesia, and the Cuban Missile Crisis. Pugwash also helped to establish research institutes in Sweden and Kenya. In addition, Pugwash began a study group on social tension and armed conflicts in 1992, which led recently to a book titled, *World Citizenship: Allegiance to Humanity*.

prof

Joseph Rotblat, a young Polish-born scientist who moved to Liverpool in 1939, went to work on the Manhattan Project because he believed Hitler was developing a nuclear weapon. When he learned that this was not true, he resigned in 1944 at the age of 36. He moved back to England and changed his field of research to nuclear medicine. He also became involved with Bertrand Russell's efforts to involve scientists in a new movement. Professor Rotblat chaired the press conference where the Russell-Einstein Manifesto was released and was a motivating force for the first and subsequent Pugwash conferences. He has worked tirelessly over the years, serving as Pugwash secretary-general between 1957-1973 and president between 1988-1997. Because Professor Rotblat has been "the most important figure in the Pugwash work," the Nobel Committee awarded the 1995 Peace Prize jointly to him and to Pugwash, the organization he founded. Not an absolutist, Professor Rotblat says he cannot say for sure that he would never work on nuclear weapons again, as he cannot predict future scenarios. He does, however, urge young people to consider taking a kind of Hippocratic Oath on the responsible use of science. (Student Pugwash USA has developed such a pledge.) Anything but complacent, he warns that technological advances, such as new genetic technologies, may lead to weapons of mass destruction that might become more readily available than nuclear weapons.

cheerful diplomacy

During the height of the Cold War, Pugwash conferences were often the only time when scientists from East and West could meet. Legend has it that during each conference a "whiskey-vodka party" would be held at an undisclosed location. Soviet scientists would manage to confound their KGB shadows and, for a limited amount of time, discussion and good spirits could be free-flowing. A Russian participant said these meetings were the beginning of "real friendship and tight cooperation" between scientists from the two countries.

einstein's timing

Albert Einstein signed what came to be known as the Russell-Einstein Manifesto as one of the last acts of his life. Bertrand Russell, who had the idea for such a letter, knew that it was important to have the backing of the most senior scientists in the world. Einstein's support was essential. While waiting for Einstein's reply, Russell was traveling and learned on board an airplane of Einstein's death. Discouraged, he assumed this meant also the end of his hopes for the appeal. When he arrived at his hotel in Paris, he found the letter from Einstein waiting for him, signed two days before Einstein died.

(anything but a) conclusion

Science is more than techniques perfected in a laboratory or research done in isolation. It is a wide-ranging human endeavor that can have profound impacts on society. Pugwash scientists and scholars try to ensure that technological and scientific developments benefit humankind, rather than serve limited national interests. As scientific possibilities expand, these questions will continue to challenge citizens around the world. In the words of Professor Rotblat, "We scientists, young and old, must nurture a vision of a better world in the next century, a world without war, a society based on care and equity, a community that will protect the environment. And we should make it our task to turn this vision into reality." Young people will bear most of the burden for determining the use of science and technology in the new millennium. Are we ready?

How do **you** answer the **tough questions**.....

When the signatories of the 1955 Russell-Einstein Manifesto said, "We have to learn to think in a new way [R]emember your humanity, and forget the rest," they were, in part, urging people to think of themselves as members of the human race and not just one particular nation, religion, or ethnic group. Knowing what you do about the Cold War, do you think this statement was needed? Do you think it's relevant today?

How important do you think it is for young people to explore their responsibility to use science and technology to create a better world before they begin their careers? Do you think you would have quit the Manhattan Project when Professor Rotblat did? Why do you think he made that decision?



Pugwash has been by clear decision a very high-level, elite, invitation-only organization. What do you think are the benefits of this structure? Do you think it would have the same impact if it were less-selective as to who could participate?

The 1988 Dagomys Declaration of the Pugwash Council states, "To survive, we must recognize that environmental degradation weakens the security of all. The challenge is to find ways to promote sustainable development of all regions in the world while reducing both military and ecological threats." Do you agree that the state of the environment can have an impact on international security? Why or why not? How would you define "sustainable development?" Do you think it is possible to develop in peace, or do you think that conflict, pollution, and other problems are inherent parts of this process?



.....

• In 1995, the Pugwash Council issued the Hiroshima Declaration on the fiftieth anniversary of the bombing of that city. They stated, "Wherever, whenever, however many mushroom clouds it may be, we say such an outcome is unacceptable and must be prevented. It can only be prevented if nuclear weapons and, ultimately, war itself are banned from this planet." Do you agree? Are there any instances in which you would order the launch of a nuclear weapon? Do you think it is necessary to eliminate war? Do you think we can achieve a war-free world?

.....

Do you think Pugwash deserved the Nobel Peace Prize? Why or why not?

If you are part of a Student Pugwash USA chapter, does your group live up to the Pugwash ideal of open dialogue? How? Do you explore technical and political solutions to pressing world problems? In what ways do you think your campus can benefit better from your discussions?



In 1958, Pugwash's Vienna Declaration stressed the importance of science and international cooperation. It stated, "The ability of scientists all over the world to understand one another, and to work together, is an excellent instrument for bridging the gap between nations We believe that nations which build their national security on secrecy of scientific developments sacrifice the interests of peace, and of the progress of science, for temporary advantages." Do you agree that scientific discourse holds a special promise for resolving differences among nations? Why or why not? Do you think a nation has a right to limit the amount of international contact it allows its scientists? Do you agree that national secrecy "sacrifices the interest of peace"?

The 1958 Vienna Declaration also states, "Scientists are, because of their special knowledge, well equipped for early awareness of the danger and the promise arising from scientific discoveries. Hence, they have a special competence and a special responsibility in relation to the most pressing problems of our times." Do you agree? What do you think are the most pressing problems of our time? Do you think it is only scientists that have a responsibility to ensure science is used responsibly?



In the 1988 Dagomys Declaration, the Pugwash Council stated, "The present inequitable international economic order confines many countries to the crushing cycle of poverty and induces them to use environmentally destructive industrial and agricultural practices. When coupled with worldwide population growth, and excessive production and profligate consumerism in the industrial nations, this is pushing the planet toward disaster." Do you agree the situation is this grave? What role do you think science can play in alleviating some of these problems?

read in a new way!

- *Arms and the Physicist*, Herbert F. York—the former director of Lawrence Livermore Lab and Pugwashite discusses how at the age of 21 he began working on atomic weapons and how he later became involved as an arms control negotiator. This is a volume in the American Institute of Physics's *Masters of Modern Physics* series. New York: AIP Press, 1995. See also his other two books, *Making Weapons*, *Talking Peace: A Physicist's Odyssey from Hiroshima to Geneva* and *A Participant's View of the Arms Race*.
 - *Citizen Scientist*, Frank von Hippel—a collection of essays about the social responsibility of scientists and the arms race by one of the country's leading physicists and a Pugwashite. This is a volume in the American Institute of Physics's *Masters of Modern Physics* series. New York: Simon & Schuster, 1991.
 - *Conversion of Military R&D*—a forthcoming Pugwash book. Macmillan.
 - *The Curve of Binding Energy*, John McPhee—a readable story of Pugwashite Theodore Taylor's experiences. A theoretical physicist involved with miniaturizing nuclear weapons, Taylor later became alarmed about the availability of nuclear materials. New York: The Noonday Press, 1994.
 - *Einstein on Peace*, Otto Nathan and Heinz Norden (editors)—contains a foreword by Bertrand Russell. New York: Avenel, 1981.
 - *Making Weapons, Talking Peace: A Physicist's Odyssey from Hiroshima to Geneva*, Herbert F. York—an earlier book by York that also traces his career. New York: Basic Books, Inc, 1987.
 - *A Nuclear-Weapon-Free World: Desirable? Feasible?* Joseph Rotblat, Jack Steinberger, and Bhalchandra Udgaonkar (editors)—the result of a Pugwash workshop, led to the formation of the Canberra Commission. Boulder: Westview Press, 1993. Note that a new Pugwash book is forthcoming on this topic: *Nuclear Weapons: The Road to Zero*.
 - *The Pugwash Conferences, A Staff Analysis Prepared for the Subcommittee to Investigate the Administration of the Internal Security Act and other Internal Security Laws*—a critical study done about Pugwash in the early days of the arms race. 87th Congress, 1st Session, 1961, Internal Security Subcommittee of the US Senate, Committee on the Judiciary.
 - *Report of the Canberra Commission on the Elimination of Nuclear Weapons*—an influential study commissioned by the Australian government. It grew out of work done by Pugwash. Professor Rotblat was a member of the Commission. Canberra, Australia: National Capital Printers, August 1996. ISBN 0 642 25090 1. Available on the Web: www.dfat.gov.au/dfat/cc/cchome.html.
 - *Scientists in the Quest for Peace: A History of the Pugwash Conferences*, Joseph Rotblat—a comprehensive history of the evolution of Pugwash during its first 15 years. Contains extensive appendices of early documents. Cambridge, Massachusetts: MIT Press, 1972. There are updates on Pugwash history provided in the *Pugwash Newsletter*, in conjunction with the quinquennial conferences.
 - *World Citizenship: Allegiance to Humanity*, Joseph Rotblat (editor)—the latest Pugwash book. St. Martin's Press, 1997.
 - *Pugwash Newsletter* and *Annals of Pugwash* are both produced regularly by the secretary-general's office. These documents include papers and abstracts written for the conferences, workshops, symposia, and seminars, as well as the Pugwash Council statements. *Pugwash Newsletter* is available on-line at www.geocities.com/CapitolHill/3778/.
- pug-ish pics**
- *Fat Man, Little Boy*—a film about the scientists who worked on the Manhattan Project.
 - *The Day After Trinity*—gives insight into the makers of the first atomic bomb. Available from Pyramid Home Video. Also available in a CD-ROM by the Voyager Company.

check it out !

cyberspace

top picks**• Pugwash Conferences on Science and World Affairs**

(contains extensive info, the *Pugwash Newsletter*, and historical documents)—
www.geocities.com/CapitolHill/3778/

- **Student Pugwash USA** (our personal favorite, links to "senior" Pugwash, chapters, and Student Pugwash groups in other countries)—
www.spusa.org/pugwash/

P.S. Stay tuned for a new Pugwash web site out of Cambridge!—
www.pugwash.org/

'wash the web!**best of the rest**

- Albert Einstein On-line (an international site that includes quotations, writings, pictures, and more)—www.sas.upenn.edu/~smfriedm/einstein.html
- Andrei Sakharov Foundation (extensive info on this Pugwashite's life, writings, and human rights efforts)—www.wdn.com/asf/
- Arms Control and Disarmament Agency (contains primary information on the treaties mentioned)—www.acda.gov/
- Bertrand Russell Archives (contains quotations, info, and allows you to search his works)—www.mcmaster.ca/russdocs/russell.htm
- European Student Pugwash (includes links to and info on groups in Europe)—www.qmw.ac.uk/pugwash/student/index.html
- Institute of Physics and Engineering in Medicine (search for the bio of Professor Rotblat and a tribute from his former colleagues)—www.ipem.org.uk/
- Monday Lobby (well-linked to US organizations working on disarmament, government sources, and political sites)—www.fas.org/pub/gen/mlg/
- NGO Committee on Disarmament (links to organizations and UN sites, good updates on campaigns and treaties)—www.igc.apc.org/disarm/
- Norwegian Nobel Institute (includes information on Pugwash and other Nobel Peace Prize winners)—www.nobel.se/laureates/peace-1995.html
- Pugwash Conferences (the London site, contains description of the organization, information on the Peace Prize, and other tidbits)—www.qmw.ac.uk/pugwash/
- Pugwash Study Group on Implementation of Chemical and Biological Weapons—www.susx.ac.uk/spru/hsp/pugwash.html

This **mind•full** was written by Sandra J. Ionno. Sandy is executive director of Student Pugwash USA. Special thanks to Professor Joseph Rotblat, Professor Francesco Calogero, and Tom Milne for their comments. Any errors are the responsibility of Student Pugwash USA. © 1997 Student Pugwash USA.

board of directors

Constance Pechura, Chair
Michael Berger
Richard Bryant
Rebecca Derrig-Green
Vanessa Gamble
Natalie Goldring
Paul Jellinek
Matthew Lee
Alan McGowan
Eric Roberts
Dann Sklarew
Nathan Steinwald
Anna Yusim

board of advisors

Sissela Bok
Honorable George Brown
Audna England
Richard Graham
Hal Harvey
John Holdren
Walter Kohn
Sally Lilienthal
Shirley Malcom
Richard Nelson
Victor Rabinowitch
Robert Rosensweig
Frank von Hippel
Victor Weisskopf
Herbert York

but wait, there's more!

- **mind•full: a brainsnack for future leaders with ethical appetites.** Volume one available, includes: international weapons trade; emerging infectious diseases; access and the Internet; public's role in science; future of nuclear weapons; water quality and availability; war and disease; renewable energy. Available this fall: human genetics; science, technology, and culture.
- **Jobs You Can Live With: Working at the Crossroads of Science, Technology, and Society.** The fifth edition of the Student Pugwash USA internship directory. It highlights approximately 200 organizations that work to promote the ethical use of science and technology and provides suggestions on how to go about the internship and job search.
- **Science, Technology, and Ethical Priorities: Proceedings of Student Pugwash USA's Ninth International Conference.** Includes perspectives from students from around the world.
- **Pugwatch.** The chapter newsletter.
- **Chapter Organizing Guide.** Newly updated, provides chapter members with an A to Z guide to getting a campus-based chapter up and running.
- **Tough Questions.** Student Pugwash USA's newsletter.

recent supporters

Apple Computer, Inc.
Carpenter Family Trust
Ciba Educational Foundation
Ciba Limited
Cyrus Eaton Foundation
W. Alton Jones Foundation
Henry P. Kendall Foundation
Jeffrey Leifer (founder)
John D. and Catherine T.
MacArthur Foundation
National Science Foundation
New-Land Foundation
Ploughshares Fund
Samuel Rubin Foundation
United States Institute of Peace
Individual Contributors

STUDENT



PUGWASH
U S A

student pugwash usa
815 15th street, nw, suite 814
washington, dc 20005 usa

address correction requested

how to find us

telephone: 202-393-6555 or 1-800-wow-a-pug • fax: 202-393-6550
e-mail: spusa@spusa.org • Web: <http://www.spusa.org/pugwash/>