

British Pugwash Group

Annual Report of the Executive Committee 2016

Developments in 2016

2016 was a mixed year for WMD non-proliferation and disarmament regimes. The P5+1 nuclear agreement with Iran entered into force on 16 January and held well throughout the year. The IAEA was able to verify full Iranian implementation of its commitments. The agreement gives Iran 15 years to build global confidence in the peaceful nature of its nuclear intentions – and it gives the global community 15 years to convince Iran's leaders that they have far more to gain by respecting the NPT than by acquiring nuclear weapons.

North Korea was the only nuclear-armed state to attract the UN Security Council's attention during 2016. There is no sign that DPRK leaders can be persuaded or coerced into dismantling their nuclear weapons programme. They thrive on their subjects' belief in the hostility of external powers. They see nuclear and missile tests as a way of reinforcing that belief – but also perhaps of causing outsiders to reassess their political goals on the Korean peninsula.

The possibility that non-state actors will acquire nuclear material, or even a nuclear device, remained a major non-proliferation concern. The last of four US-sponsored Nuclear Security conferences took place in April 2016; an IAEA conference followed in December. Physical protection for nuclear material and counter-trafficking are at the heart of international cooperation to minimise this threat.

2016 was a particularly disappointing year for nuclear arms control. The US government firmed up plans to replace all three parts of the US nuclear triad. The UK government obtained parliamentary assent to proceed with the construction of four *Dreadnought*-class SSBNs (nuclear-powered ballistic missile submarines).

Nuclear "modernisation" continued in Russia and China. A falling-off in US-Russian communication on strategic stability and an increase in mutual distrust precluded progress towards further nuclear limitation agreements. US ratification of the CTBT remained a remote prospect.

UN General
Assembly votes
on nuclear ban
proposal

However, on 23 December the UN General Assembly voted overwhelmingly for negotiation of a legal ban on the possession and use of nuclear weapons. The five Nuclear Weapon States will ignore such a ban, but its existence will make it harder for them to continue downplaying Article VI of the NPT.



Evidence accumulated that emerging hypersonic, cyber and underwater technologies may come to reduce the reliability of current strategic deterrents. Could this lead the Nuclear Weapon States to look for an alternative, non-nuclear basis for strategic stability?

A December Biological Weapons Convention (BWC) review conference failed to produce agreement on proposals for verifying compliance and strengthening the regime. The BWC lacks institutional tools for biological disarmament and coordinating international efforts to achieve global health security.

Destruction of chemical weapons in the two states that still have significant holdings (the USA and Russia) continued steadily, albeit at a slower pace than once was hoped. Some Iraqi pre-1991 CWs also remain to be destroyed; they present an environmental threat and potentially are too lethal for traditional means of destruction. Despite the elimination of declared Syrian CWs, a state of war notwithstanding, several instances

of CW use were recorded. The divergent political objectives of external powers hampered an adequate response to those incidents.

Lastly, mention of the US presidential election result may not be out-of-place. US support has long been crucial to the survival of a rules-based global order, of which the WMD regimes form a part. Will an administration committed to putting America first be ready to cooperate with other powers to maintain that order, and to foster the international institutions that underpin it? Will they attach importance to honouring international non-proliferation and disarmament obligations?

Changes at British Pugwash

Christopher Watson passed the chair of the Executive Committee of British Pugwash to Peter Jenkins on 1 December 2016. British Pugwash has reason to be extremely grateful to Christopher for the time and energy that he devoted to Pugwash during his five years in the chair. His determination to make a reality of the proposed British Institute for Nuclear Disarmament (BRINDI) was especially noteworthy. It was a project that made great demands on his time, and that, in the end, required him to swallow with grace a bitter pill: the political climate had changed since the idea of BRINDI was first floated and was no longer supportive.

Christopher's successor, Peter Jenkins, is delighted that he will be able to look to Christopher for wise counsel, as Christopher is willing to remain a member of the Executive Committee.

Peter was a member of HM Diplomatic Service for 33 years. His first (1975-78) and last (2001-06) postings were to the UK mission to the International Atomic Energy Agency and UN organisations in Vienna. In between, he served in Washington, Paris, Brasilia and Geneva (UN).

Obituary; Professor Robert Hinde

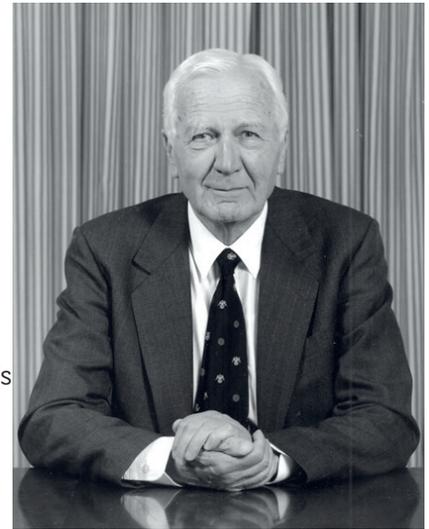
2016 ended on a very sad note with the death just before Christmas of Robert Hinde, who was for many years – as chair of both the British Pugwash Group and the Trust, and a long-standing active member of the Executive Committee – a constant mainstay of British Pugwash. He also served on the Council of International Pugwash, and succeeded Jo Rotblat as a trustee of the International Pugwash Foundation.

Robert was a distinguished scientist, a fellow of both The Royal Society and British Academy, and a former

Professor Robert Hinde

Master of St John's College, Cambridge. His primary research focus was on animal behaviour and development, in particular the changes in neural connections that result from an animal's learning experiences and environmental interactions. He received honorary doctorates and

awards for his wide-ranging work in anthropology, developmental psychology, social psychology, psychiatry, primatology and zoology. During his time as a flying boat commander during the war, he took the first (but unofficial!) aerial count of Gannets nesting on Sula Sgeir!



Robert was greatly concerned with the prevention, as well as the moral and ethical issues, of war. His experience of WWII in which his best friend and his elder brother were both killed, had a lasting effect on him. He wrote a number of books including *Bending the Rules* and *War No More* in which he said that war should not be seen as heroic but as an unacceptable social institution.

He was greatly admired and loved. And he always remembered his humanity. A tribute to Robert's life and work can be found at <http://www.joh.cam.ac.uk/professor-robert-hinde-1923-2016>.

Projects

Nuclear Weapons/Trident

Trident: Emerging Technologies

This British Pugwash research project, in collaboration with BASIC in a close supporting role, has progressed rapidly this year from the original scoping meeting at the beginning of 2016. The project's aim is to bring into the open the scientific and technological advances in anti-submarine warfare, the future direction of travel of these technologies, and their potential impact on the undersea battle space.

The project focuses particularly on the changing undersea environment for SSBNs, and for countermeasures, and the strategic challenges for the

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UK's *Dreadnought* programme to replace Trident. We produced a collation of the current literature on this subject and, in collaboration with other organisations, media and academic institutions, helped to stimulate a public discussion on the issue.

A May 2016 British Pugwash workshop which brought together US and UK scientists involved in developing undersea sensing, communications and robotics looked at key technologies, and the future trajectory in acoustic and optical undersea sensing, magnetic anomaly detection, undersea robotic vehicles, artificial intelligence, and undersea communications. See report at <http://tinyurl.com/jccklhm>

A conference in London on the "Impact of Emerging Technologies on the Future of SSBNs", held jointly with BASIC and the University of Leicester included scientific and technical presentations from leading scientists and academics, and more discursive sessions on future strategic warfare and specific strategic challenges for the UK. Two reports were produced which assess the effect of emerging undersea technologies on ballistic missile submarines (SSBNs) and strategic stability: *Impact of Emerging Technologies on the Future of SSBNs* and *Will the Atlantic become transparent?*

Nuclear Weapons Policy Liaison Group

British Pugwash continues to participate in this group which comprises expert members of the UK nuclear international security community acting in an individual capacity to discuss and strategise how to engage and work with parliamentarians, the press and each other to inform debate on UK nuclear weapons policy. This informal network also serves an important role by facilitating the community's cohesion and effectiveness.

Non-proliferation & disarmament

NPT RevCon and BRINDI

As outlined in our 2015 Annual Report, British Pugwash encountered a marked deterioration in the international climate towards disarmament during that year. One indication of this trend was that the 2015 NPT Review Conference ended in May 2015 without achieving agreement on any significant steps towards implementing Article VI of the Treaty.

Nevertheless, many NPT signatories expressed concern at the apparent reluctance of the P5 countries to honour their obligations under the Treaty, and British Pugwash, with the support of the BRINDI Working Group, decided to make strong efforts in 2016 to continue to take forward the BRINDI agenda.

An agreed programme of work to this end was largely completed by mid-2016, and this was reported in a series of documents, which included a BRINDI Proposal, setting out the four main areas in which the Institute would work, and a BRINDI Prospectus, which gave details on the practical aspects of BRINDI's mode of operation. However by then, the financial resources made available from the Ziman bequest had nearly been exhausted, and in spite of strenuous efforts by members of the BRINDI team, it has not so far proved possible to raise further funding to enable us to bring this work to full realisation.

It appears that a combination of a difficult economic climate, and the political realities created by the UK decision to renew its Trident nuclear deterrent, have made this an unpropitious time to seek funding for a disarmament-related project. We hope that in due course the political climate will become more favourable, and that what we have achieved will then provide a basis on which we can continue to build.

Science and ethics

Pugwash has an ex officio seat on the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), and John Finney participated in its 9th Extraordinary Session in Paris in September.

For the first time, COMEST met in joint sessions with the UNESCO International Bioethics Committee (IBC), which facilitated good interactions across the biological/non-biological boundary that is becoming increasingly blurred as modern technology advances. At the opening session, it was reported that COMEST's earlier proposal that the 1974 Recommendation on the Status of Scientific Researchers be revised has been accepted by UNESCO, and an Expert Group has been formed to work on a draft new Declaration. The meeting's main focus was to work on two draft reports: on (a) Water Ethics and (b) Robotics Ethics. The latter work, initiated following two earlier Pugwash workshops on the ethics of modern robotics in surveillance, policing and warfare, has broadened to include the ethical implications of the wider use of robotics in, for example, medical procedures, health and social care.

The draft reports were also discussed in joint sessions with IBC and the Intergovernmental Bioethics Committee (IGBC), and in open sessions at which a number of Ambassadors and members of national delegations were present. It was gratifying that the feedback given on the Robotics report was very positive indeed. The working group, of which John Finney is a member, plans to meet again in Spring 2017 to work towards a final report for Autumn 2017.

Energy policy and Climate Change

The United Nations Conference on Climate Change in Paris in December 2015 set an ambitious target for the international community to reach – to limit the global average surface temperature rise by 2100 to less than 2°C. It did not indicate how this target might be met. British Pugwash, in collaboration with members of the European Physical Society (EPS) Energy Group, has been exploring how this might be done, using the 'Global Calculator', a computer software package recently developed by an international team led by the UK Department of Energy & Climate Change (DECC).

The British Pugwash/EPS team has been reviewing this software, and in January 2016 published Climate Change and the DECC Global Calculator, with some initial conclusions. This review drew on a 2013 British Pugwash report 'Pathways to 2050: three possible UK energy strategies', which used an earlier DECC calculator to design three possible "pathways to 2050" for the UK alone, designated "High Nuclear", "High Renewables" and "Intermediate".

The Global Calculator extends this methodology, enabling the user to design a possible energy system for the whole world by specifying values for 50 parameters which define a possible 'pathway'. It then calculates total global Greenhouse Gas emissions up to 2100 for that pathway, and estimates the global average surface temperature rise resulting from those emissions. DECC also published the parameters of 26 'example' pathways, designed by reputable NGOs and others, which users could take as starting points for their designs of new pathways. The January 2016 paper notes that most of these example pathways fail to meet the Paris target, in some cases by a large margin.

More recently, the British Pugwash/EPS team selected three of these example pathways which represented global 'High Nuclear', 'High Renewables' and 'Intermediate' options, giving estimated temperature rises of between 2.1 and 2.45°C, and sought to reduce the estimated rise by altering selected parameters appropriately.

In a presentation to the EPS Energy Group in September 2016 we reported finding a number of pathways with significantly lower temperature rises, including three with an estimated rise of only 1.6°C. As in the earlier report relating to the UK alone, any of these pathways has potential show-stoppers, so the team recommends governments to pursue several options in parallel until such uncertainties have been resolved.

Global energy strategies with low temperature rises

In a lecture at the Rutherford Appleton Laboratory in Oxfordshire on 24 November 2016, Dr Christopher Watson, Chair of British Pugwash, and Jef Ongena, Chair of the European Physical Society Energy Group presented these latest results more publicly.

The lecture also drew attention to some issues not clarified in the Paris Agreement, including: baseline data defining the meaning of "pre-industrial levels" of emissions; the timetable for reaching stability at a rise level "well below 2°C"; the list of relevant Greenhouse Gases (GHGs); the procedure used to estimate future temperature rises from cumulative GHG emissions; and the criteria used to distinguish the obligations of 'developed' and 'developing' nations. (<http://britishpugwash.org/global-energy-strategies-with-low-temperature-rises/>)

Student/Young Pugwash

On 21 March 2016, British Student /Young Pugwash (SYP) held its Annual Conference at SOAS in London. This highly successful conference aimed to provide a platform for students, young researchers, scholars and practitioners to discuss issues at the intersection of science and world affairs, as well as to encourage students to join the British SYP. The event attracted 70 participants from 11 universities across the UK. Of these, 20 students were selected to present a paper at the conference. The final papers are on the British Pugwash website: <https://tinyurl.com/zrprfzl>

In mid-2016, Alexandra Tsamados (SYP Coordinator since May 2015) moved on and was replaced by Andrew Gibson. We offer Alexandra our thanks and congratulations on her excellent work, as well as assistance in ensuring a smooth transition. Andrew is building on Alexandra's work, particularly trying to stimulate SYP activity in the North and Midlands.

Over the last year, SYP has organised one meeting in Bristol, one in Leeds, three in Warwick, two in Nottingham and one at SOAS, in the latter hosting Jayantha Dhanapala (President of the Pugwash Conferences on Science and World Affairs). It also launched a successful blog-writing competition with attractive prizes and sent one of its members to the ISODARCO conference in Italy in January.

There are currently three Student Union-recognised SYP groups (at Warwick, SOAS and Leeds Beckett), an 'unrecognised' group at KCL and active SYP members at Oxford, UCL, Exeter and Bath.

SYP's second Annual Conference is scheduled for 25th March 2017, with a focus on nuclear arms control and disarmament. 150 younger people are registered for this event and 20 intend to give presentations.

Visit of Amb. Jayantha Dhanapala to UK

Ambassador Jayantha Dhanapala, the President of Pugwash and previously UN Under Secretary General for Disarmament Affairs was in London in early December 2016 as a member of the Supervisory Board of the Luxembourg Forum on Preventing Nuclear Catastrophe to attend its annual meeting.

With financial support from the Marmot Charitable Trust, he was able to extend his trip to hold further meetings in Westminster on nuclear weapons and other international security issues, and to discuss with British Pugwash issues relating to Pugwash International.



Jayantha addressing a student meeting at SOAS

Jayantha briefed us on the recent activities of Pugwash International, emphasizing his consistent policy of maintaining strong links between national groups and Pugwash International, recruiting young dynamic scientists and encouraging fund-raising for new activities. A number of areas for future Pugwash activity were discussed, including increased co-operation among European Pugwash groups especially in the Chemical and Biological Weapons field.

On 4 December, he addressed a student meeting on "Disarmament and Development" at Bath University. Following his two days at the Luxembourg Forum, he resumed his British Pugwash programme on December 8, meeting with Shadow Foreign Secretary Emily Thornberry, the Shadow Defence Secretary Nia Griffiths and the Shadow Minister for Peace and Disarmament Fabian Hamilton. This was followed by discussions with Sir Adam Thompson, the Director of the European Leadership Network, on international security matters (Jayantha is a member of the Asia Pacific Leaders Network). In the evening, Jayantha participated in a lively

Question and Answer session on Nuclear Issues in South Asia at the School of Oriental and African Studies (SOAS), organised by Student/Young Pugwash and attended both by students and members of the public.

The following day he met with the Head of the Counter Proliferation Unit at the Foreign and Commonwealth Office, in a discussion focussed on the use of chemical weapons in the conflict in Syria. He also met with Natalie Samarasinghe, Executive Director UNA-UK, a fellow Sri Lankan, and with Dr Josephine Ojiambo the Deputy Secretary General Political of the Commonwealth Secretariat. Jayantha made the case to her that the Commonwealth could play a significant role in enhancing international security, especially in the context of nuclear weapons, a point which the Deputy Secretary General commented was 'music to my ears'.

Hosted Projects WMD Awareness (WMDA)

WMD Awareness highlights this year included an event in collaboration with Global Strategy Forum in March where Eric Schlosser, the author of *Command and Control*, and former Defence Secretary, Des Browne, discussed the dangers inherent in nuclear weapons possession. The event was chaired by Michael Ancram and attracted an audience of around 100.

In March and April, WMD Ambassadors ran a successful film festival in several cities in the UK. The main event was a film night set in the basement of a London church. The audience was immersed in a simulated post-nuclear accident scenario, the culmination of which was the showing of the film 'Threads'. It was an exceptionally effective event and deeply moving for the audience.

The main focus through the summer 2016 and into spring 2017 has been to support Smriti Keshari and Eric Schlosser to bring the production of the acclaimed film and music experience "*the bomb*" to the UK and to coordinate a series of events related to this. "*the bomb*" was launched in New York at the Tribeca Film Festival and received excellent reviews.

Rotblat Lecture 2016: William Perry "My Journey to the nuclear brink"

The 12th Joseph Rotblat Lecture at the Hay Festival, held on 2 June 2016 in cooperation with WMD Awareness, featured William Perry, Bill Clinton's Defence Secretary on 'My Journey at the Nuclear Brink', in conversation with BBC correspondent Nik Gowing.

Perry explained the development of his thinking on weaponry and security from the Cuban Missile Crisis to crafting a defence strategy in the Carter Administration to offset the Soviets' numeric superiority in conventional forces. He presided over the dismantling of more than 8,000 nuclear weapons in the Clinton Administration and, in 2007, created (with George Shultz, Sam Nunn and Henry Kissinger) the Nuclear Security Project to articulate "a vision of a world free from nuclear weapons and to lay out the urgent steps needed to reduce nuclear dangers". <https://www.hayfestival.com/p-10953-william-perry-talks-to-nik-gowing.aspx?skinid=16>

PeaceJam UK

PeaceJam UK is an educational programme working with Nobel Peace Laureates.

In March 2016 it held its youth conference at the University of Winchester, hosting 200 young people with their teachers as well as participating students from the university. The guest laureate was Rigoberta Menchú Tum from Guatemala who was awarded the Nobel Peace Prize in 1992 for her work for the rights of native people everywhere. She was the first indigenous person to receive the award. At the conference young people from the UK were joined by students from Greece as well as first nation students from America.

Our activities this year have expanded into Europe as PeaceJam has held conferences in Brussels and Amsterdam as well as Greece and Monaco. PeaceJam UK has delivered mentor training to students in Europe and some of our university student mentors have worked at the European conferences, giving them valuable international experience. We also attended the Telegraph Festival of Education held at Wellington College in June where one of our directors, Dr. Fiona Macaulay from the University of Bradford, spoke. We delivered a workshop and made a number of contacts with primary and secondary schools. PeaceJam has also produced a new curriculum called 'Compassion in Action', a programme which explores bullying from the personal social and institutional perspectives, which is proving to be very popular with schools.

We have a number of hubs of activity in the UK, including Wales, York, Leeds, Coventry and Jersey, and our students have contributed their projects to the Billion Acts of Peace Campaign, a global citizens' movement started by PeaceJam in partnership with Google, designed to tackle many of the most important problems we face. Since June 2015, as a result of



Nobel Peace Prize winner Rigoberta Menchú Tum with participants in the 2016 PeaceJam UK conference

war, 80,000 unaccompanied minors have crossed into Greece, and one of our schools, The Mount in York, has linked with school students in Greece and worked with them on a project to send Lifebags (backpacks containing hygiene products, flashlights and raincoats) to refugee children there. So far they have sent over 500. For more information: <http://www.peacejam.org.uk/>

Discussion meetings

Climate change: can the world meet the targets agreed in Paris?

In December 2015, the nations of the world met in Paris and agreed to try to reduce greenhouse gas emissions so as to hold "the increase in average surface temperature to well below 2°C". How this was to be achieved was a question left unanswered. At a British Pugwash discussion meeting on 5 April, Dr Christopher Watson presented our findings, and reviewed the options available to Europe and the UK to achieve the desired reductions in CO₂ emissions, describing the technology options and, as important, their economic and social implications (see report at <http://tinyurl.com/jpavrbx>).

Trident submarines: will its successor be obsolete by the time it arrives?

At a British Pugwash discussion meeting on 13 June at University College London, Julian Borger, the Guardian's world affairs editor, spoke on advances in drone warfare and underwater surveillance which call into question the Successor's stealth. In accordance with the strategic Defence and Security Review 2015, a debate was held in Parliament (in July) on the principle of Continuous At-Sea Deterrence (CASD) and the government's plans for *Dreadnought*, the replacement for the current platform for the UK's nuclear weapons.

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However recent developments in sensing and communications technologies, advances in marine robotics vehicles and advanced computing, have serious implications for the deployment, strategy and modalities of SSBNs. Many questions need answers to enable a fully informed debate in Parliament to take place (see report at <http://tinyurl.com/hlhecwa>).

What has become of the July 2015 Nuclear Agreement with Iran?

At a British Pugwash discussion meeting on 11 October, Peter Jenkins outlined the most important commitments that Iran and the P5+1 assumed in July 2015, to resolve concerns about the nature of Iran's nuclear programme. He described progress made towards full implementation of those commitments. He then discussed whether the agreement is likely to survive political opposition in both Tehran and Washington DC, and whether Iran still presents a long-term nuclear proliferation risk. <http://britishpugwash.org/what-has-become-of-the-july-2015-nuclear-agreement-with-iran-2/>

International Pugwash

During 2016, International Pugwash has been active on several fronts:

1. Afghanistan: It has held two major "second track" conferences:

22 November: Meeting in Islamabad involving selected Afghan and Pakistani participants, discussing such topics as the status of the "Durand line", Afghan refugees living in Pakistan and the scope for peace negotiations with non-state actors such as the Taliban.

13 December: Meeting in Kabul with leading Afghan figures, discussing a Pugwash 19-point proposal on a possible approach to a peace process in Afghanistan.

2. Korea: On 11 September Jayantha Dhanapala and Paolo Cotta-Ramusino issued a statement "very much regretting" the nuclear weapon test in North Korea, and urging DPRK to sign the Comprehensive Test Ban Treaty and engage in dialogue and confidence-building measures with its neighbours.

3. Europe: On 26-27 September it held a round-table meeting in London to discuss "Security challenges and nuclear weapons in Europe". This focussed on establishing a baseline for discussion of the US nuclear weapons based in Europe, taking into account recent events.

4. Planning the 62nd Pugwash Conference. This is to be held in Astana, Kazakhstan on 25-28 August 2017.

A significant development is that Sandra Ionno Butcher

has announced her resignation as Executive Director of Pugwash, effective as of 1 January 2017, for family reasons. She hopes to continue her work on the Pugwash History Project. We are grateful to her for all her work for British and International Pugwash over the years.

Pugwash photo archive

The Pugwash photo archive, based at British Pugwash, aims to organise, index and digitise the collection and eventually make it available to Pugwash members and the public through a searchable database. In spring 2016, Andreas Tsamados from King's College London completed his six-month internship, having made great strides in cataloguing and researching the photographs; and in October we welcomed three new interns – Susannah Bain, Daniel Lewicki and Lucia Molnarova, all from UCL – to continue the work. We will soon have completed the first stage of the project with some 1,100 photos added to the database.

Our current intern Lucia Molnarova writes:



This delightful photograph (above) was taken at the 35th Pugwash Conference, which met in the city of Campinas in Brazil 3-8 July 1985 on the theme of *East-West Conflicts and the Third World: Interrelationships and Implications for Peace*. The Campinas conference was notable because it coincided the 30th anniversary of the Russell-Einstein Manifesto, which gave rise to the first ever Pugwash Conference in Pugwash, Nova Scotia, in 1957.

The 1985 participants included 89 scientists, scholars and public figures, as well as 12 students, from 33 countries. This photograph is one of my favourites in the Pugwash Photo Archive because it helps me picture a well-rounded image of Pugwash conferences as occasions where informal discussions and building relationships were as significant as the formal sessions of

each meeting. The jolly Pugwashites in the photograph are (left to right): Jane Willms, Joseph Rotblat, Eymert den Oudsten, Katherine Girrier, Prof. C. Kiuranov, Terri Sabonis-Chafee and Dr. C. Rommel.

Sources: Pugwash Photo Archive, Pugwash Newsletter (Oct 1985, Vol 23, No.2) Special thanks to Mr. Tim Walker for his extensive help in identifying the people in the photograph.

British Pugwash Trust Trustees 2016

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- **CJM Charitable Trust**
- **Marmot Trust**
- **Network for Social Change Charitable Trust**
- **Polden Puckham Charitable Foundation**

British Pugwash Group Executive Committee 2016

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