

# The planetary health imperative to eliminate nuclear weapons

Tilman Ruff AO

International Campaign to Abolish Nuclear Weapons (Nobel Peace Prize 2017)  
International Physicians for the Prevention of Nuclear War  
(Nobel Peace Prize 1985)  
Nossal Institute for Global Health, University of Melbourne

Consultant: WHO

ISSOP Beirut Reducing the threat of war 27 Sep 2019  
Thanks: Alan Robock, Mike Mills, Ira Helfand



"Those who have the privilege to know have the duty to act."

"The unleashed power of the atom has changed everything save our modes of thinking, and thus we drift towards unparalleled catastrophe."

Albert Einstein  
1946



Nuclear Weapons constitute  
**THE GREATEST**  
**IMMEDIATE THREAT**  
to the Health and Welfare of Mankind

**WORLD HEALTH ORGANIZATION**

World health Assembly Resolution WHA 36.28 16 May 1983

# Effects of nuclear war on health and health services, WHO 1984

## Effects of Nuclear War on Health and Health Services



- “It is obvious that no health service in any area of the world would be capable of dealing adequately with the hundreds of thousands of people seriously injured by blast, heat or radiation from even a single 1-megaton bomb.”
- **“... the only approach to the treatment of the health effects of nuclear explosions is primary prevention of such explosions, that is, the primary prevention of atomic war.”**



# Nuclear Winter

Cold, dry, dark, and more UV  
Crops dying and global famine

# Nuclear weapon induced fires

“Even the smallest of nuclear weapons, such as the ~15 kt weapon used on Hiroshima, exploding in modern megacities would produce firestorms that would build for hours, consuming buildings, vegetation, roads, fuel depots, and other infrastructure, releasing energy many times that of the weapon’s yield.”

- Mills MJ, et al. Multidecadal global cooling and unprecedented ozone loss following a regional nuclear conflict. *Earth’s Future*, 2014.  
doi:10/1002/2013EF000205

**Hiroshima:** fires released ~1000 times the energy of the explosion





**Limited regional  
nuclear war with low  
yield weapons:**

**2 billion victims  
of starvation  
from nuclear  
famine?**

**+ epidemics, conflict**





“Humanity now faces two simultaneous existential threats, ... nuclear weapons and climate change – were exacerbated this past year ...

It’s a state as worrisome as the most dangerous times of the Cold War, ...

The global nuclear order has been deteriorating for many years, ... The architecture of nuclear arms control built up over half a century continues to decay, while the process of negotiating reductions in nuclear weapons and fissile material stockpiles is moribund. The nuclear-armed states remain committed to their arsenals, are determined to modernize their capabilities, and have increasingly espoused doctrines that envision nuclear use.”

”

**2019: It is still  
2 minutes to  
midnight**

BAS Board of Sponsors  
– 15 Nobel laureates



“The existential threat that nuclear weapons pose to humanity ... disarmament is the only guaranteed means to prevent nuclear war ....”

Antonio Guterres, UN Secretary  
General, 24 May 2018

“We are living in dangerous times.

We are on the brink of a new cold war.

... a resurgence of civil conflict, after more than two decades of decline.

Global military spending has more than doubled in inflation-adjusted dollars since the end of the cold war.

Morally repugnant weapons ... have been repeatedly used.

Arms control agreements have been abandoned or disrupted.”



**Rising nuclear risk,  
disarmament and  
the Nuclear Non-  
Proliferation Treaty**

“We are now dangerously close to a world without arms control agreements, paving the way for a new arms race and for increased risk of nuclear weapons use.

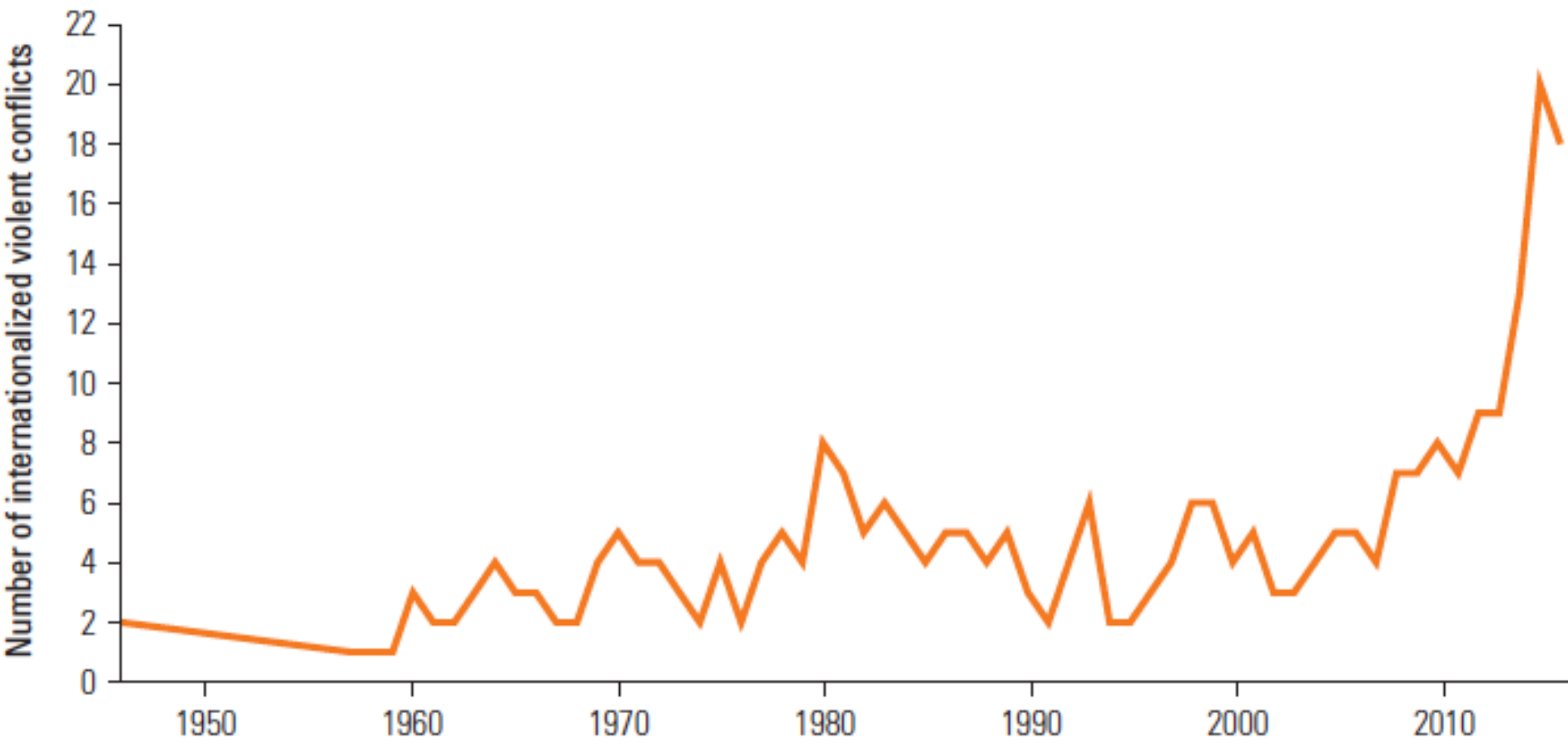
...the risk of nuclear weapons being used is now greater than it has been since the end of the Cold War.”

# United States intelligence community annual assessment of worldwide threats 29 January 2019

warned that:

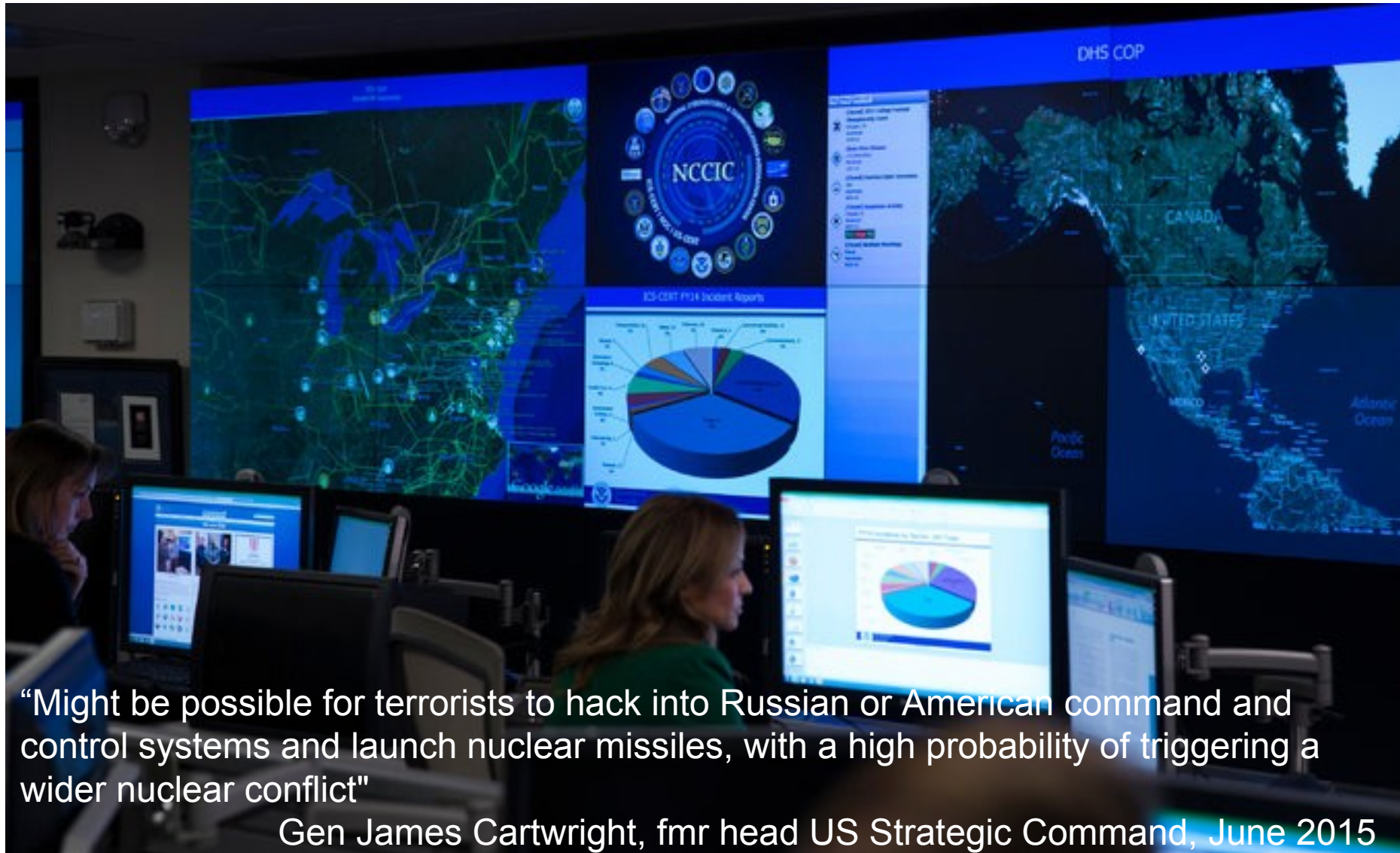
the effects of climate change and environmental degradation increase stress on communities around the world and intensify global instability and the likelihood of conflict, causing the danger of ... nuclear war to grow

**FIGURE 1.5** Number of Internationalized Violent Conflicts, Global, 1946–2016



Source: Uppsala Conflict Data Program and Peace Research Institution Oslo (Allansson, Melander, and Themnér 2017; Gleditsch et al. 2002).

# Cyberwarfare and nuclear weapons



“Might be possible for terrorists to hack into Russian or American command and control systems and launch nuclear missiles, with a high probability of triggering a wider nuclear conflict”

Gen James Cartwright, fmr head US Strategic Command, June 2015

US National Security Agency computers hacked 2017

US National Cybersecurity and Communications Integration Center, Arlington Va, NYT 29.4.15

# Fissile materials global stockpiles – Jan 2017

Weapon yield	Plutonium	Highly enriched uranium
1 kiloton	1 - 3 kg	2.5 - 8 kg
20 kiloton	3 - 6 kg Nagasaki bomb 6 kg	5 - 16 kg
IAEA “significant quantities”	8 kg	25 kg
Modern nw	4 kg US declassified	12 kg

## Highly enriched uranium (HEU)

- **1340 (±125) tons HEU**
- 99% in n armed states
- India, Pak, Ru, DPRK producing
- >74,400 1<sup>st</sup> gen implosion nw @ 18 kg

## Separated plutonium

- **520 (± 10) tons** – growing
- 230t military, 290t civilian
- All weapons usable
- India, Pak, Israel, DPRK prod for nw
- ~130,000 nw @ 4 kg

“We the peoples of the United Nations determined to save succeeding generations from the scourge of war ... ”

## UN General Assembly Resolution 1.1, 1946



**Figure 3.1.** The first meeting of the United Nations General Assembly, London, January 1946. Passed on 24 January 1946, General Resolution 1.1 established a commission to draw up a plan “for the elimination from national armaments of atomic weapons.” *Source: United Nations Photo.*

# The obligation to disarm

## Nuclear non-proliferation Treaty(NPT)

- 191 states parties
- entered into force 1970

## Article VI

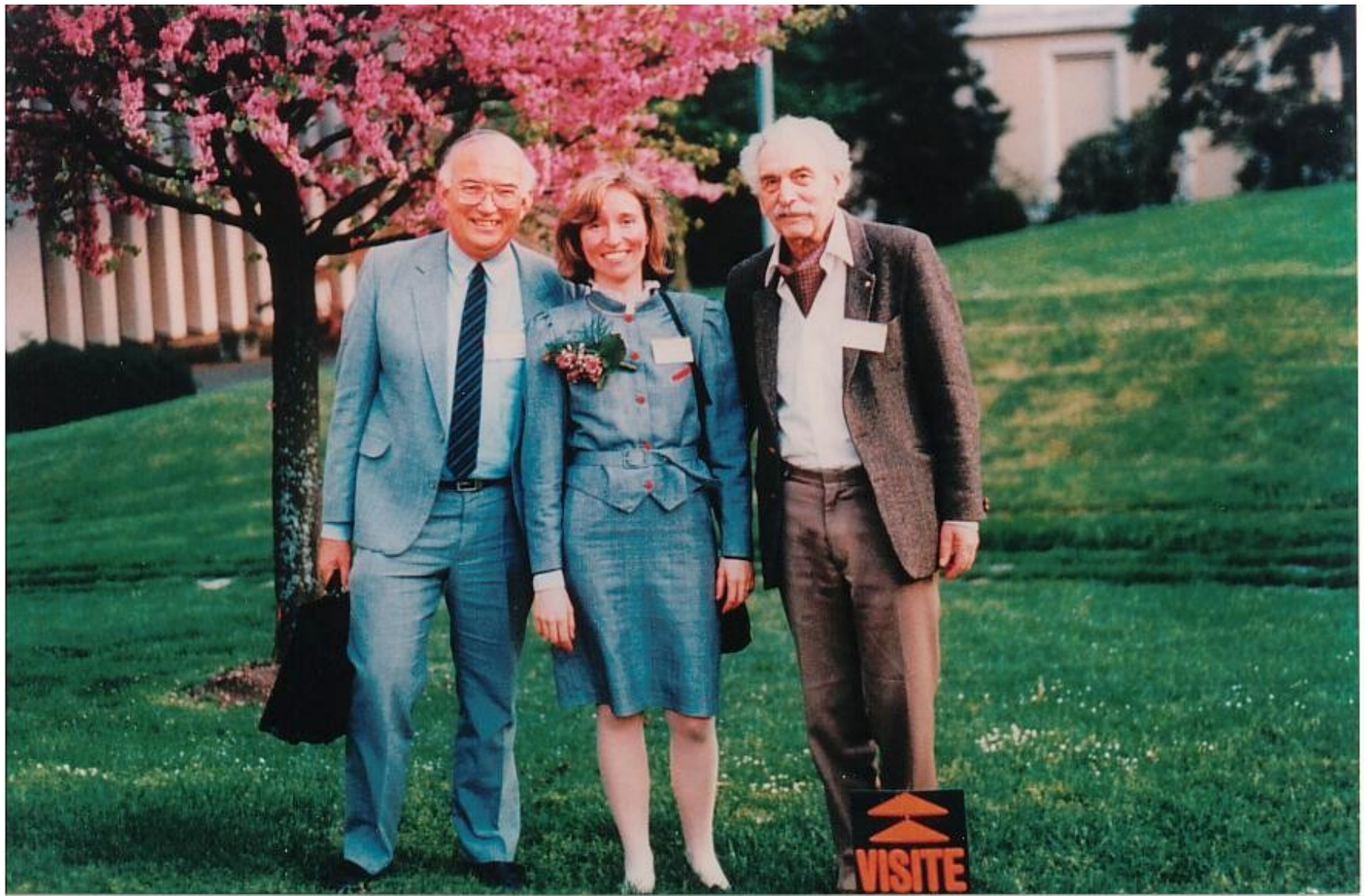
“Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament .... “

# International Court of Justice

Advisory Opinion 8 July  
1996, unanimously:

“...there exists an obligation  
to pursue in good faith  
**and bring to conclusion**  
negotiations leading to  
nuclear disarmament in  
all its aspects under strict  
and effective  
international control.”





Vale George Salmond

George, Ann Marie  
Janson, Erich  
Geiringer WHA 1992

# Indiscriminate inhumane weapons banned by international treaty



- [Expanding bullets 1899]
- Biological weapons 1972
- Chemical weapons 1993
- Landmines 1997
- Cluster munitions 2008

- The main basis for bans on all these has been humanitarian – unacceptable harm with any use
- Proven process: stigmatise - prohibit - eliminate

# Norms matter

“How many States today boast that they are “biological weapon states” or “chemical weapon States”?”

Who is arguing now that bubonic plague or polio are legitimate to use as weapons under any circumstance, whether in an attack or in retaliation? Who speaks of a bio-weapon umbrella?”



Angela Kane,  
when UN High  
Representative for  
Disarmament Affairs, NZ,  
2014

# Datuk Dr Ron McCoy





**ican**  
**international campaign**  
**to abolish nuclear weapons**

Founded by IPPNW and MAPW in Melbourne

**Campaign coalition:** 541 partner organisations in 103 countries

**Goal:** A treaty for prohibit and provide for the elimination of nuclear weapons

Based on the unacceptable, catastrophic consequences of any use of nuclear weapons

[www.icanw.org](http://www.icanw.org)

# ICAN principles

- Campaign coalition
  - Broad, diverse
- Clear goal: treaty-based prohibition, elimination
  - Stigmatise – prohibit – eliminate
- Humanitarian basis
  - Crucial role of humanitarian evidence
    - Consequences
    - Existential danger
    - Impossibility of response
  - and survivors of nuclear use and testing
- Global
- Involve young people
- Balance horror, humour, hope
  - Underpinned by humanity
- Twin approach:
  - Credible partner for governments
  - Citizen action
- Money:
  - Poola Foundation, Kantor family (Eve, Anne, Tom)

# UN Security Council summit 24 Sep 2009



- First UNSC meeting presided by US president; 13 other heads of state/ govt
- UNSC Resolution 1887
  - “resolving ... to create the conditions for a world without nuclear weapons
  - “Reaffirming that proliferation of weapons of mass destruction, and their means of delivery, constitutes a threat to international peace and security,
  - Resolving, affirming, reaffirming, recalling, bearing in mind, underlining, calling for, recalls, welcoming, supporting, noting, notes, gravely concerned, recognising, expressing, emphasizes, encourages, stresses, undertakes, urges, declares
  - 29. Decides to remain seized of the matter.”

# Bringing the era of nuclear weapons to an end

ICRC President Jakob Kellenberger 20 April 2010 to Geneva diplomatic corps



- “Nuclear weapons are unique in their destructive power, in the unspeakable human suffering they cause, in the impossibility of controlling their effects in space and time, in the risks of escalation they create, and in the threat they pose to the environment, to future generations, and indeed to the survival of humanity.
- “... preventing the use of nuclear weapons requires ... negotiations aimed at prohibiting and completely eliminating such weapons through a legally binding international treaty.”

# May 2010 NPT Review Conference

- A commitment to “achieve the peace and security of a world without nuclear weapons.”
- “expresses ... deep concern about the catastrophic humanitarian consequences of any use of nuclear weapons, and reaffirms the need for all States at all times to comply with applicable international law, including international humanitarian law.”

# Humanitarian Impact of Nuclear Weapons



SECOND CONFERENCE ON THE  
HUMANITARIAN IMPACT OF  
NUCLEAR WEAPONS  
NAYARIT, MEXICO 13-14 FEBRUARY, 2014



VIENNA CONFERENCE ON  
THE HUMANITARIAN IMPACT  
OF NUCLEAR WEAPONS  
8-9 DEC. 2014

- Three intergovernmental conferences on HINW, attracting most of the world's governments, concluded with no significant challenge:
  - any use of nuclear weapons would be a **catastrophe**
  - **no effective humanitarian response** is possible
  - risk of nuclear weapons use has been underestimated, is growing, and exists as long as the weapons do
  - there is a **legal gap**: the most destructive of all weapons are not explicitly prohibited

# Austrian → Humanitarian Pledge to fill the legal gap

“Austria pledges to cooperate with all relevant stakeholders ... to stigmatize, prohibit and eliminate nuclear weapons.”

– AUSTRIAN PLEDGE

127 states joined



# How can states without NW change the game?

- Nuclear-armed states currently arming and modernising, not serious about disarmament
- States can't eliminate weapons they don't own, but they can de-legitimise, stigmatise and ban nuclear weapons
  - if they use the right forum that cannot be blocked
    - Not NPT meetings
    - Not UN Conference on Disarmament

# UN Working Group on nuclear disarmament 2016



International Physicians  
for the Prevention of Nuclear War



## The health and humanitarian case for banning and eliminating nuclear weapons

International Physicians for the Prevention of Nuclear War (IPPNW)<sup>†</sup>  
World Medical Association<sup>††</sup>  
World Federation of Public Health Associations<sup>‡</sup>  
International Council of Nurses<sup>‡‡</sup>

“Banning and eliminating nuclear weapons is the only  
way to ensure planetary health”

# United Nations Conference to Negotiate a Legally Binding Instrument to Prohibit Nuclear Weapons, Leading Towards Their Total Elimination

16 Feb, 27-31 March, 15 June – 7 July 2017



Conference President Ambassador Elayne Whyte Gómez, Costa Rica



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Available languages: **English**

## **UN conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination**

A legally binding instrument to prohibit nuclear weapons would establish general prohibitions and obligations as well as a political commitment to achieve and maintain a nuclear-weapon-free world.

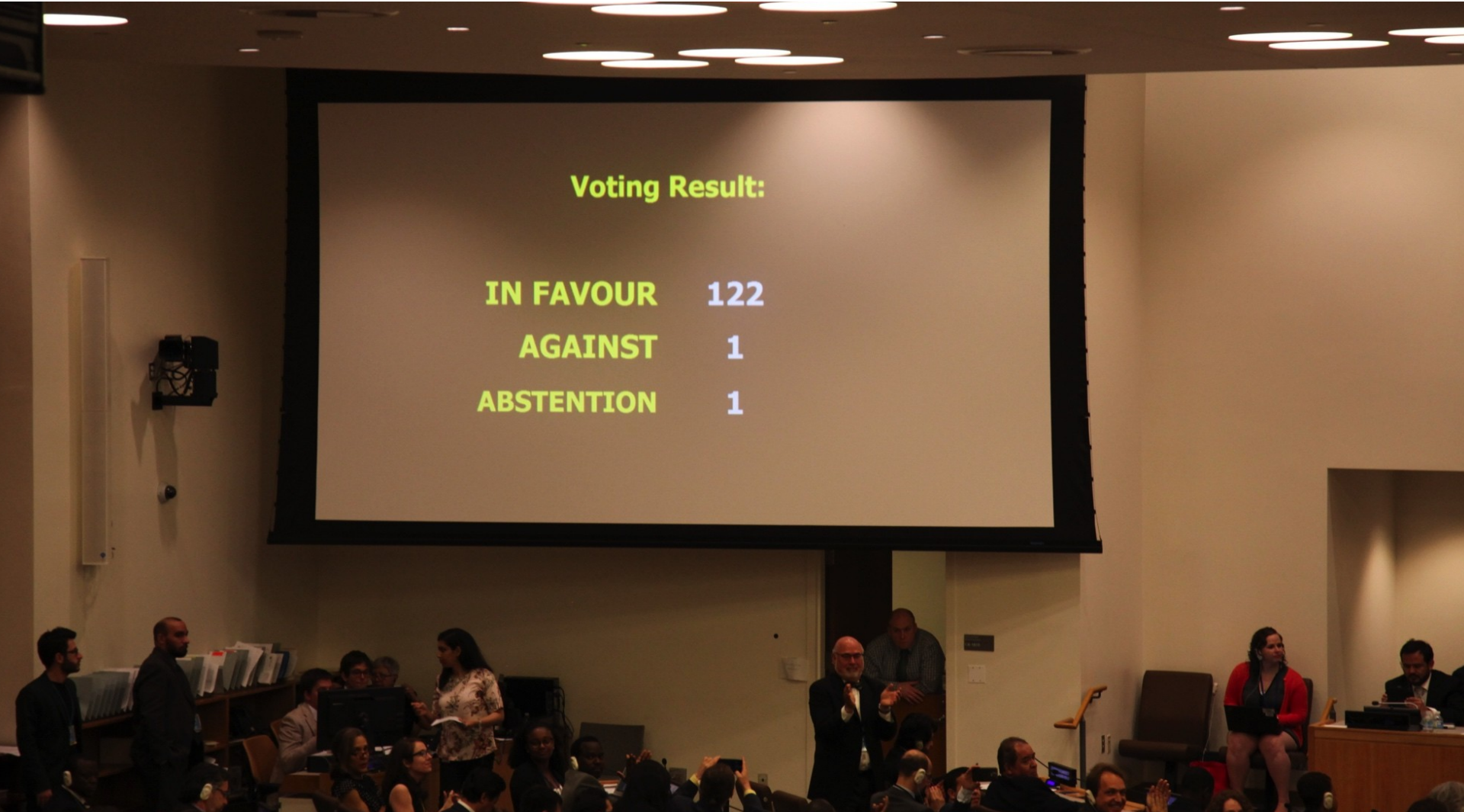
Sue Coleman-Haseldine, Kokotha nuclear test survivor, South Australia



1047:02 am, 7 July 2017

**Voting Result:**

<b>IN FAVOUR</b>	<b>122</b>
<b>AGAINST</b>	<b>1</b>
<b>ABSTENTION</b>	<b>1</b>





**“Without the leadership so ably displayed by ICAN, we would not have achieved our objective today.”**

**Thomas Hajnoczi, Austrian Ambassador, 7.7.17**



**BIOLOGICAL WEAPONS BANNED 1972**



**CHEMICAL WEAPONS BANNED 1993**



**LAND MINES BANNED 1997**



**CLUSTER BOMBS BANNED 2008**



**NUCLEAR WEAPONS BANNED 2017!**

25 Sep 2019: 70 signatures  
26 ratifications





*We are saying to our children,  
YES, it is possible to inherit a world  
free from nuclear weapons.*

WHYTE GOMEZ  
President, U.N. Nuclear Weapons Ban Conference

# Treaty on the Prohibition of Nuclear Weapons

- Reflects health /humanitarian evidence
  - “Catastrophic consequences cannot be adequately addressed, pose grave implications for human survival, the environment, socioeconomic development, ... food security and the health of current and future generations”
  - First disarmament treaty to cite disproportionate impact on women and girls and Indigenous peoples
- **Categorical and comprehensive prohibition**
- **Provides pathways for all states to join:**
  - Possess NW
  - Prior possession NW
  - NW stationed
  - Assist in preparations to use NW
- Maintains/strengthens safeguards
- Obligations:
  - Victim assistance and environmental remediation
  - International cooperation
  - Promote universalisation
- Indefinite duration
- No reservations
- Entry into force: 50 ratifications

AMERICAS

# A Treaty Is Reached to Ban Nuclear Arms. Now Comes the Hard Part.

By RICK GLADSTONE    JULY 7, 2017

#NuclearBan

WISH YOU WERE HERE.



# “There are no grey areas when it comes to survival”

... I don't want your hope. ... I want you to panic. I want you to feel the fear I feel every day. And then I want you to act.

I want you to act as you would in a crisis. I want you to act as if our house is on fire. Because it is.”



Greta Thunberg  
World Economic Forum, Davos  
25 Jan 2019

# Moral leadership

“ ... a crucial basis for their elimination.”

Peter Maurer  
ICRC President

“the possession of nuclear weapons is immoral”

Pope Francis 12 Jan 2019





WORLD  
MEDICAL  
ASSOCIATION

WMA STATEMENT ON NUCLEAR WEAPONS  
Revised Reykjavik, Iceland Oct 2018

- “... joins with others ... , including the Red Cross and Red Crescent movement, International Physicians for the Prevention of Nuclear War, the International Campaign to Abolish Nuclear Weapons, and a large majority of UN member states, in calling, as a mission of physicians, on all states to promptly sign, ratify or accede to, and faithfully implement the Treaty on the Prohibition of Nuclear Weapons; and
- Requests that all National Medical Associations join the WMA in supporting this Declaration, ... educate the general public and to urge their respective governments to work urgently to prohibit and eliminate nuclear weapons, ...”

# Government action at all levels

- All levels of government have a responsibility to act to protect their citizens
- Cities urging their federal government to join the TPNW: **ICAN Cities Appeal**
  - Melbourne, Sydney, Canberra, Bayside, Blue Mountains, Lismore, Wollongong, Darebin, Fremantle, Inner West NSW, Moreland, Randwick, Yarra, Yarra Ranges, Newcastle, Hobart, Benalla, Augusta Margaret River, Cockburn, Hume, Ballina, Shellharbour, ...
  - Madrid, Barcelona, Geneva, Mainz, Milan, Manchester, Trondheim, Toronto, Baltimore, Los Angeles, 1700+ Japanese cities incl Hiroshima and Nagasaki, Washington DC, Paris, Oslo, Vancouver, ...



CAZALY WARD

# DAREBIN COMMUNITY NEWS



JUNE/JULY 2019

Maintaining and investing in our assets page 4

Reservoir East Primary School wins a new bike fleet page 5

ICAN Mural Launch page 8

ICAN founders Dave Sweeney and Dimity Hawkins with members of the Lester family at the launch of a new mural at Preston Library, which celebrates ICAN and pays tribute to Yankunytjatjara Elder and anti-nuclear activist, Yami Lester.

Photo published with kind permission from the family of Mr Yami Lester.

# Government action at all levels

- States

- Assembly and Senate of California, 5 Sep 2018:  
“The Legislature urges our federal leaders and our nation to embrace the Treaty on the Prohibition of Nuclear Weapons and make nuclear disarmament the centerpiece of our national security policy; ...”
- Similar resolutions by state legislatures in New Jersey and Oregon

- National parliaments

- US House of Reps McGovern-Blumenauer resolution 302: Embracing the goals and provisions of the Treaty on the Prohibition of Nuclear Weapons, 8 April 2019

# Money is moving

Divestment – banks, sovereign wealth funds, pension funds etc

- Cooperative Bank (UK), 2015;  
Amalgamated Bank (US) Sep 2017
- Norwegian Pension Fund – largest wealth fund (US\$1.1 trillion) pulled out of BAE Systems because nw “violate fundamental humanitarian principles” Jan 2018
- Dutch ABP – largest pension fund in Europe will divest all holdings in nw companies, product by definition harmful to humans, Jan 2018
- Deutsche Bank, May 2018
- Largest Belgian KBC bank, June 2018
- AP4 Swedish pension fund, Jan 2019
- Resona Holdings Japan, finance Jan 2019
- Cities of Cambridge (MA), Takoma Park, Ojai, (Calif); Leuven (Belg)
- Ghent University



# Money needs to move

## Australia

### – Hall of Shame:

• A\$6529.3 m to nw makers Jan 2017 – Jan 2019 by:

- ANZ \$1904 m
- Macquarie \$2197 m
- Westpac \$272.2 m
- CBA \$517m

### – Hall of Fame:

- Australian Ethical
- Future Super



# Walking the talk – first do no harm



**MAPW**

health professionals promoting peace

## University of Melbourne

**“Partnering with nuclear weapons companies is unethical and unacceptable.”**



## Unacceptable weapons

**Statement for students, staff and alumni of the University:**

- I will not accept research or other funds from nor collaborate with such companies;
- I want my university to avoid or end funding from, including for research, and collaboration with such companies.

# Ripple effects

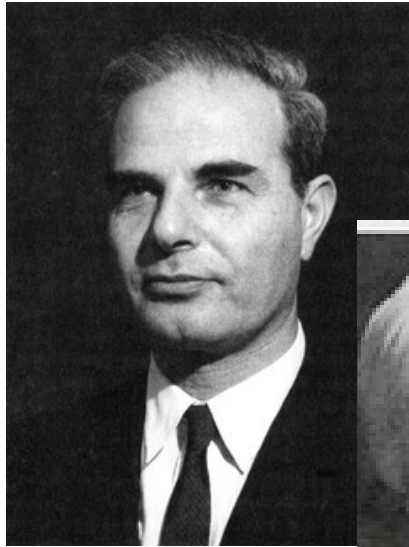
UN Human Rights Commission, General Comment on ICCPR  
Article 6 on the right to life, 30 Oct 2018:

Stronger after a long wait:

“66. The threat or use of weapons of mass destruction, in particular nuclear weapons, which are indiscriminate in effect and are of a nature to cause destruction of human life on a catastrophic scale is **incompatible with respect for the right to life and may amount to a crime under international law. ...**

They must also respect their international obligations to **pursue in good faith negotiations in order to achieve the aim of nuclear disarmament** under strict and effective international control [274] and to **afford adequate reparation to victims** whose right to life has been or is being adversely affected by the testing or use of weapons of mass destruction, ...

# 1958: Baby teeth and strontium-90

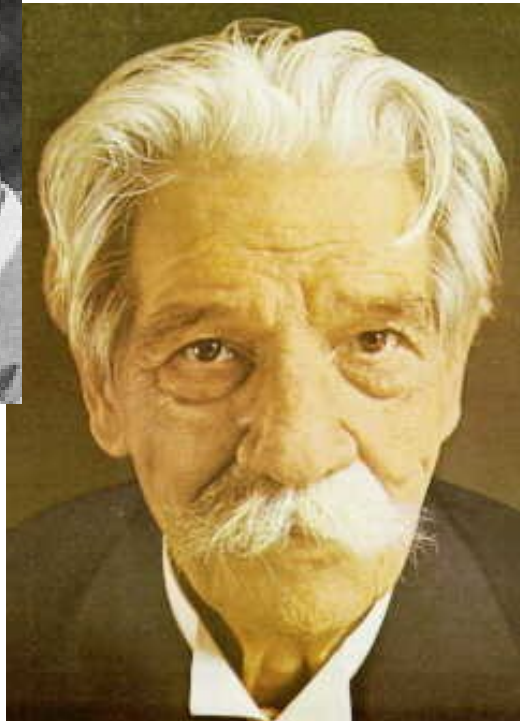


**Kalckar** *Nature*, August 6, 1958

**Bauer**



**Schweitzer**



**Spock**



Project Tooth Fairy

Soviet  
President  
Mikhail  
Gorbachev  
credited  
IPPNW  
with decision  
to halt nuclear  
testing



Drs. Chazov (left) and Lown with President Gorbachev

## IPPNW: acting on evidence

- “I admire both your movement and its work ... We take into account the activities of your movement in shaping our foreign policy”

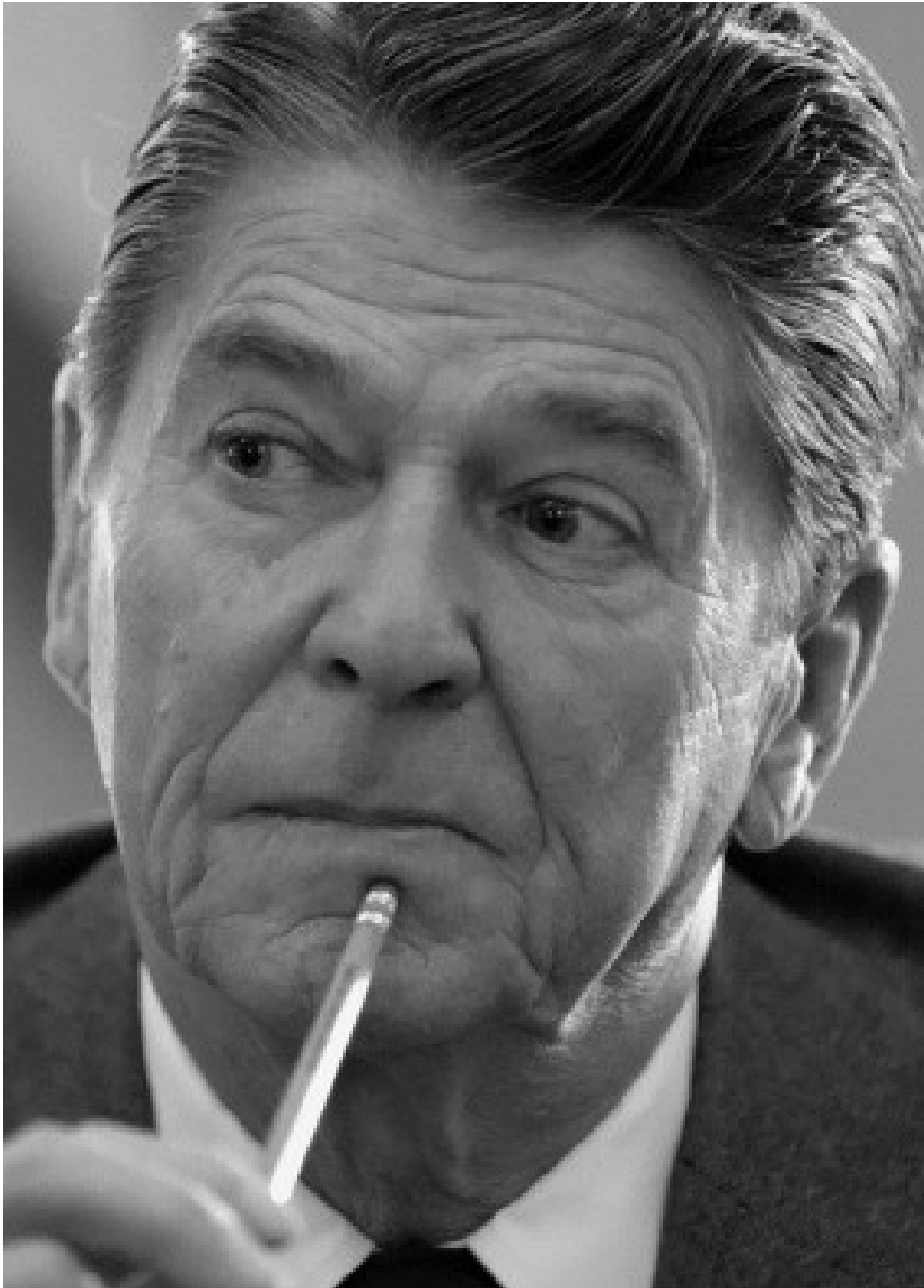
M Gorbachev 2 June 1987

- I want to thank you for your great contribution to preventing nuclear war. Without it and other effective antinuclear initiatives this [INF] Treaty would probably have been impossible.”

M Gorbachev 1993

- “You have made medical reality a part of political reality.”

David Lange, New Zealand PM 1986



“ A nuclear war cannot be won and must never be fought. The only value in our two nations possessing nuclear weapons is to make sure they will never be used. But then would it not be better to do away with them entirely?”

- “We seek the total elimination one day of nuclear weapons from the face of the Earth.”
  - Second Inauguration Speech, 21 Jan 1985

President Ronald Reagan

“A nuclear war cannot be won and must never be fought.”

- Presidents Ronald Reagan and Mikhail Gorbachev, 1985 Reykjavik Summit



# DEN NORSKE NOBELKOMITÉ

HAR OVERENSSTEMMENDE MED  
REGLENE I DET AV

## ALFRED NOBEL

DEN 27. NOVEMBER 1895 OPPRETTEDE  
TESTAMENTE TILDELT

International Physicians for the  
Prevention of Nuclear War

NOBELS FREDSPRIS FOR 1985

OSLO, 10. DESEMBER 1985

*Eivind Harnvåg*      *Gjerdhede Andreassen*  
*Olavdi Gunnar Stålslett*      *Francis Røysund*

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# IPPNW Nobel Peace Prize 1985

“..IPPNW has performed a considerable service to mankind by spreading authoritative information and creating an awareness of the catastrophic consequences of atomic warfare.

... Such an awakening of public opinion, ... can give the present arms limitation negotiations new perspectives and a new seriousness.”

*"For the greatest benefit to mankind"*  
*Alfred Nobel*

# 2017 NOBEL PEACE PRIZE

## International Campaign to Abolish Nuclear Weapons (ICAN)



- “... for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its ground-breaking efforts to achieve a treaty-based prohibition of such weapons.”





# Pediatrics / child health

- "The future always belongs to the next generation"  
Aunty Sue Coleman-Haseldine
- Children have the most at stake
- Children have increased vulnerability
  - radiation
  - Physical and mental vulnerability in armed conflict
  - lifelong growth & developmental consequences
  - Depend on parents, society
- Growing agency
  - eg climate strikes
- Custodial responsibilities of parents, grandparents, carers
- High level of awareness among professionals of importance of children's environment - social, biological, physical
  - Advocacy role well established
-

# Using the TPNW to end nuclear weapons

- Getting the Treaty into force
  - As many signatures and ratifications as soon as possible
- Engage national governments
  - Current and potential
  - Other levels of government eg ICAN Cities Appeal
- Parliamentarians
  - ICAN Parliamentary Appeal
  - Parliamentary support groups
- Diverse civil society voices
- Build coalitions
  - Health professional
  - Link with climate, young people
- Divestment
  - Banks
  - Pension funds
- Universities
  - Stop taking money from nuclear weapons makers
- Join/support IPPNW/ affiliates, ICAN/ partners



*The* NEW ENGLAND JOURNAL *of* MEDICINE

## Perspective

### **The 2017 Nobel Peace Prize and the Doomsday Clock — The End of Nuclear Weapons or the End of Us?**

Lachlan Forrow, M.D., Tilman Ruff, M.B., B.S., and Setsuko Thurlow, C.M., M.S.W.

**T**he awarding of the 2017 Nobel Peace Prize to the International Campaign to Abolish Nuclear Weapons (ICAN) may mark a turning point in efforts to ensure that humanity survives

stan, India, Israel, and North Korea — maintain nearly 15,000 nuclear weapons. Almost 20 years after warnings were published in the *Journal* and elsewhere about