

Andrew M. Sessler: The Symposium

March 15, 2003

Lawrence Berkeley National Laboratory

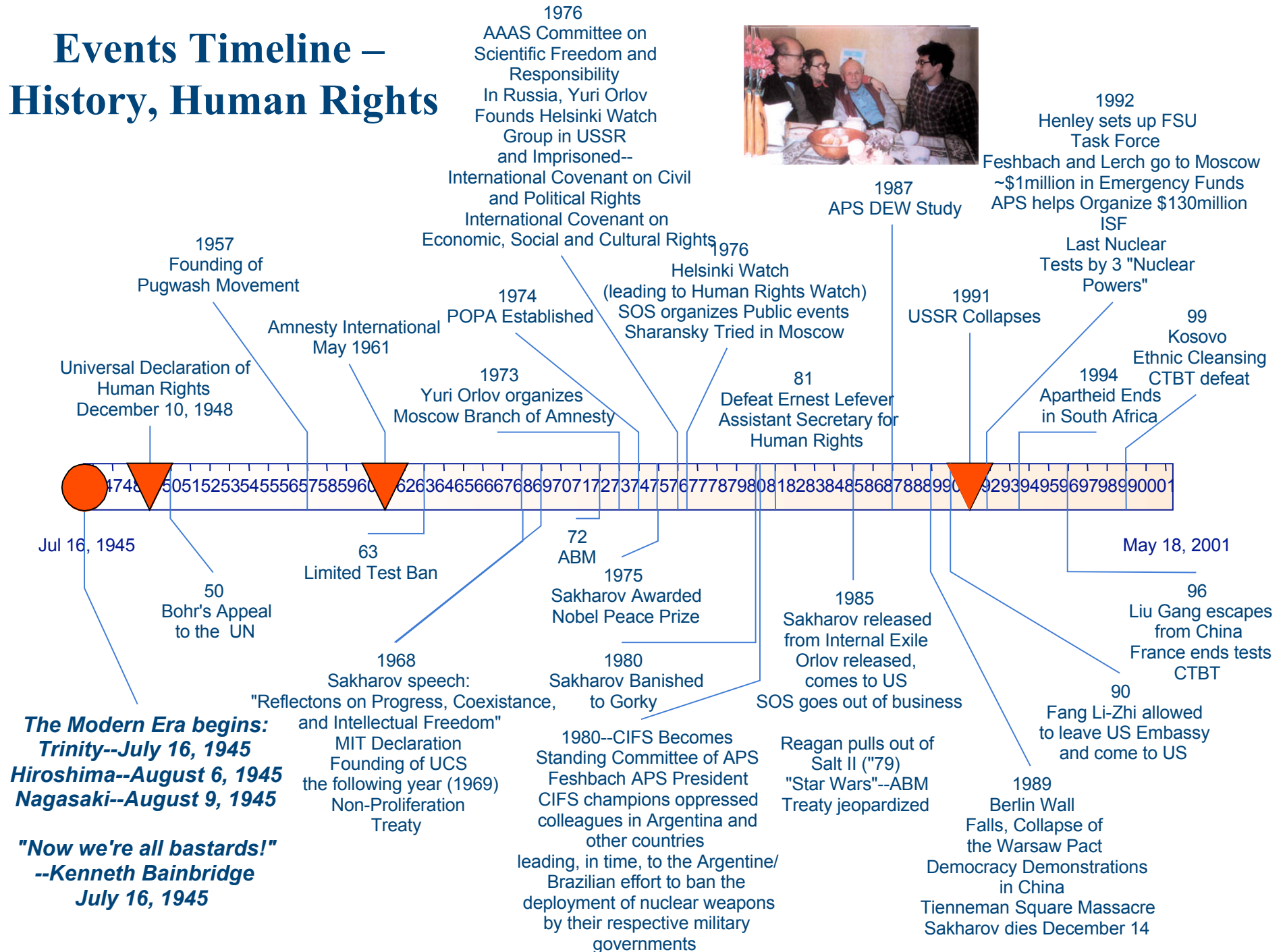


***The Conscience of Science:
Human Rights and Human Welfare***

***“Humanity has every reason to place the
proclaimers of high moral standards and
values above the discoverers of objective
truth”***

-Albert Einstein

Events Timeline – History, Human Rights





Issues in Science and Human Rights

- Freedom of scientific exchange (political and economic impediments)
- Connections between social issues (war, arms control, civil rights) and Human Rights (scientists as symbols of the struggle for human rights)
 - *the ambiguity to follow*
- Defense of oppressed colleagues
 - *Boycott or Engagement or, perhaps, both?*
- Preserving the physics community after the collapse of the USSR
- The emergence of science as a tool for human rights
 - *Forensic anthropology*
 - *Truth and reconciliation commissions*
 - *Study of ethnic cleansing*
 - *Database management, statistical tools*
 - *Humanitarian Demining*



The Great Debate: To Fraternize or Not to Fraternize. That is the Question.

“Spurred on by the enthusiastic response to our first venture ... we embarked on a moratorium on scientific exchange between individual American scientists and the Soviet Union, although with much misgiving and discussion, since it is so against scientific tradition.”—Andrew Sessler, “Physicists and the Eternal Struggle for Human Rights,” 1995



April 22, 1992 Meeting of APS

■ ***The iron curtain is up, but
the golden one is down.***

– Boris Altshuler, Lebedev Institute of Physics,
Moscow



April 22 Meeting (continued)

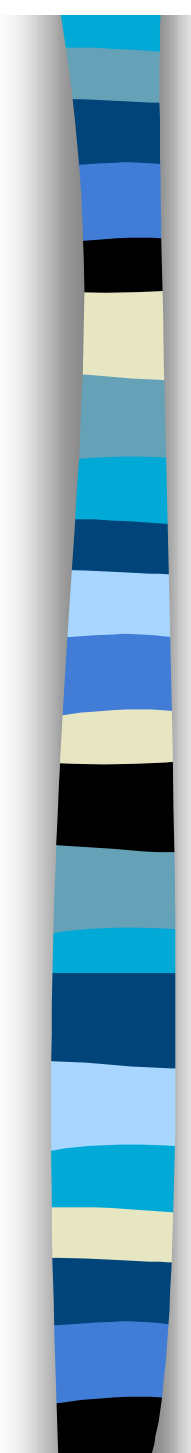
There are five different parallel crises developing inside Russia which will have a strong impact on the future survival of the scientific community:

- **Political and social crisis associated with the collapse of former structures,**
- **Economic crisis accompanying the political and economic phase transformation from a socialist economy to a capitalist economy,**
- **Crisis of support of the general public which considers science as least important for democratic transformation,**
- **Structural crisis associated with the transformation of the Academy,**
- **Energy crisis (infrastructure support).**
 - Roald Sagdeev, University of Maryland

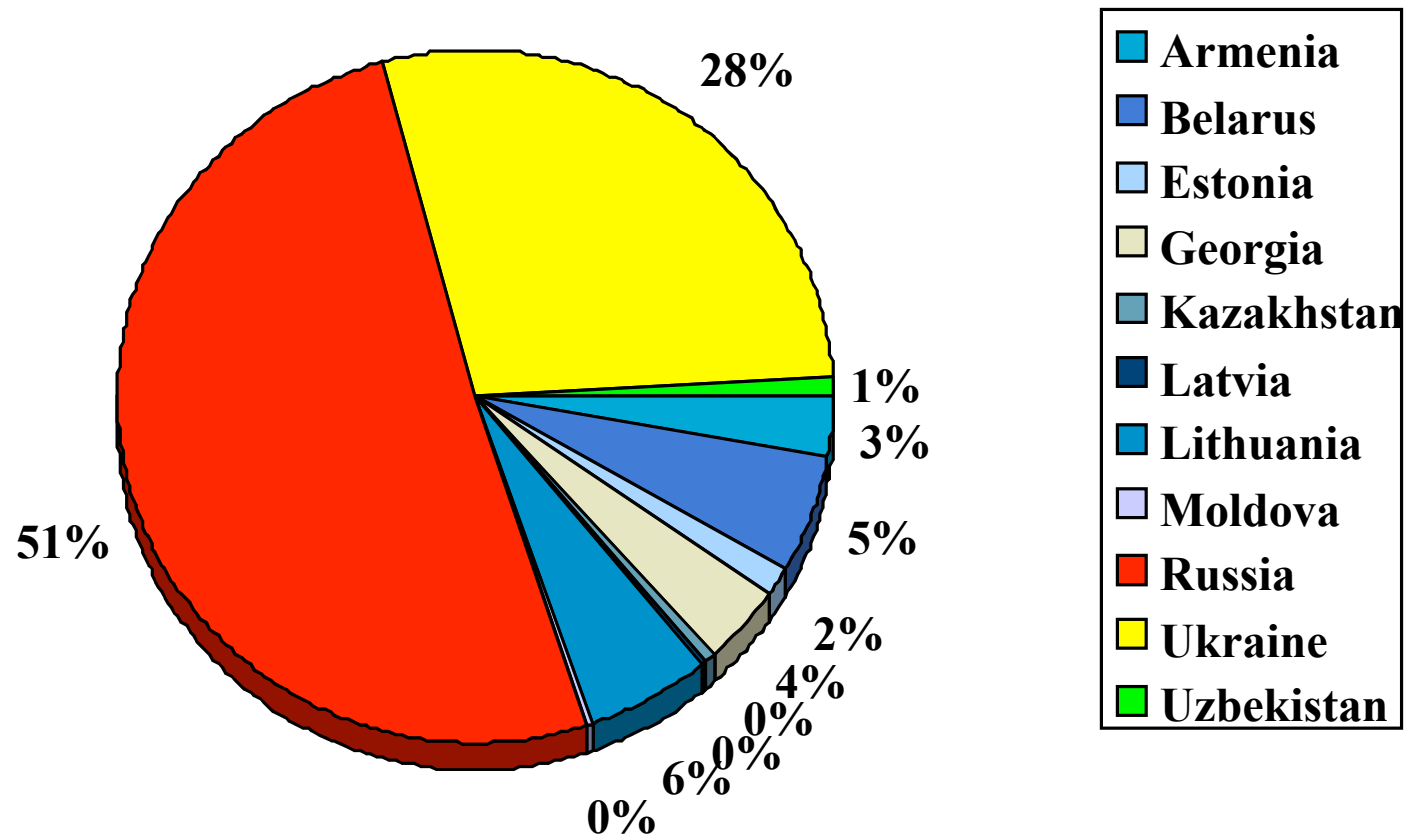


Executive Board Resolution

- ***Our primary objective in aiding our colleagues in the FSU has been to encourage and support the best talent to continue scientific work during the present crisis so that the truly unique character and culture of this outstanding scientific community might endure. Given our long association with the physics community in the FSU, and the deeply held sentiment among American physicists that they are part of an old, established and vibrant international community, our efforts have also had a humanitarian motivation.***

- 
- ***In pursuing our objectives, we have been guided by certain principles ...***
 - ***All aid is to be given directly to working physicists ...***
 - ***The principle of science by peer-review of investigator-initiated projects should be central ...***
 - ***The community of physicists in each of the successor states should participate in our program by forming advisory committees ...***
 - ***International collaboration, communications, access to literature and attendance at international scientific meetings are important***
 - ***FSU governments, academies, institutions and universities should be partners in our efforts. They should provide matching funds ...***

Allocations per Newly Independent State (APS Program)





The International Science Foundation

- *First organizing meetings held in Washington and New York in 1992*
- *Capitalized with \$100 M by George Soros*
 - *(~\$30 M added later)*
- *Peer-review panels organized in 1993*
- *Emergency short-term grants in 1993*
- *Long-term grants 1993-1995*
- *Other programs: journals, travel, Internet, professorships \$500 emergency grants to 26,145 scientists (1993)*
- *2-year grants averaging \$13,000 each supporting 3,550 research projects with 15,000 scientists*
- *368 libraries, 98,000 journals, \$1.7 M*
- *Telecommunications (Internet) ~\$16 M*



APS Role in ISF Program

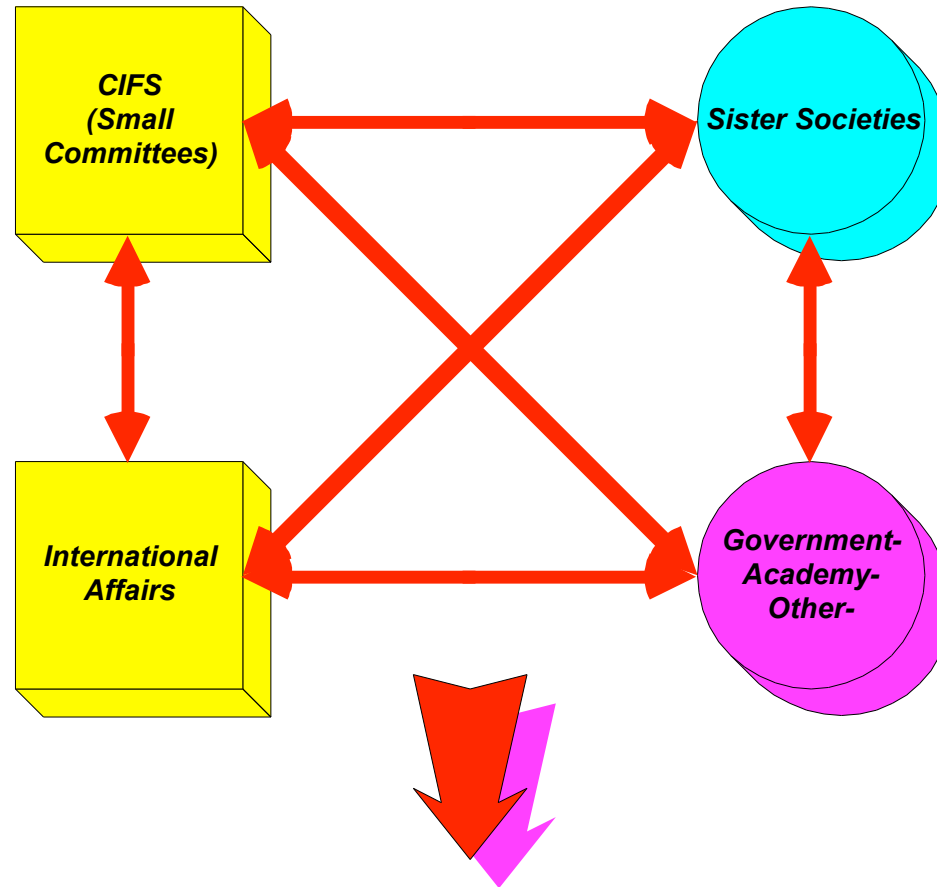
- ***Organize and administer 4 physics panels to review proposals and recommend awards.***
- ***Catalog and process 6,000 proposals.***
- ***Provide 72 complete sets of the Physical Reviews/year (~250 kg/set) at 10% of cost.***
- ***Participate in organizing and advisory committees and governing board.***
- ***Participate in travel, schools and other programs.***

The Persecution and Repression of Scientists Continues

- ➔ ■ **Alexander Nikitin (Russia)-- Resolved**
- **Valentin Danilov (Russia)**
- **Grigory Pasko (Russia)**
- ➔ ■ **Released, pending disposition**
- **Igor Sutyagin (Russia)**
- **Yuri Bandazhevsky (Belarus)**
- **Thiha Thu (Myanmar)**
- **Tong Shidong (China)**
- **Wang Youcai (China)**
- **Hua Di (China)**
- **Yang Zili (China)**
- **Omar Daraghmeh (Palestinian)**



APS Programs (Implementation)



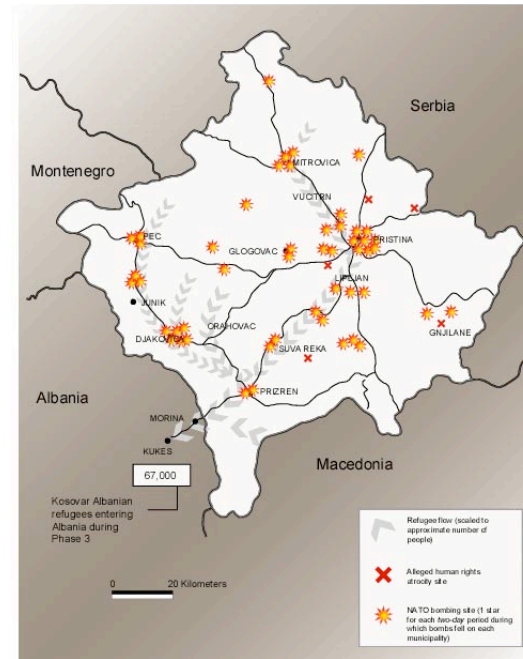
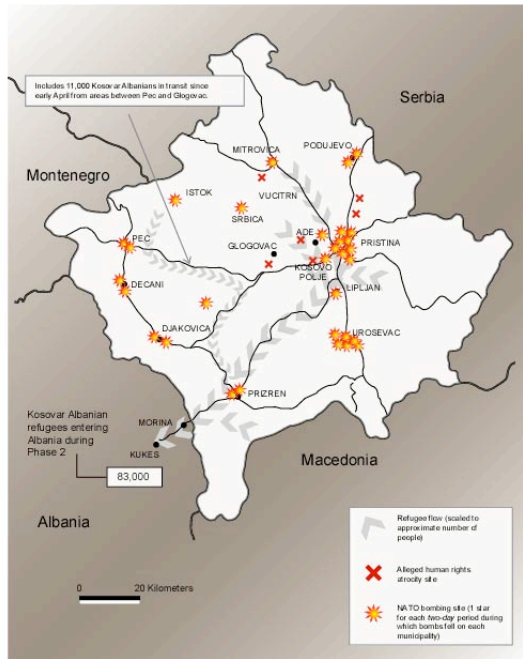
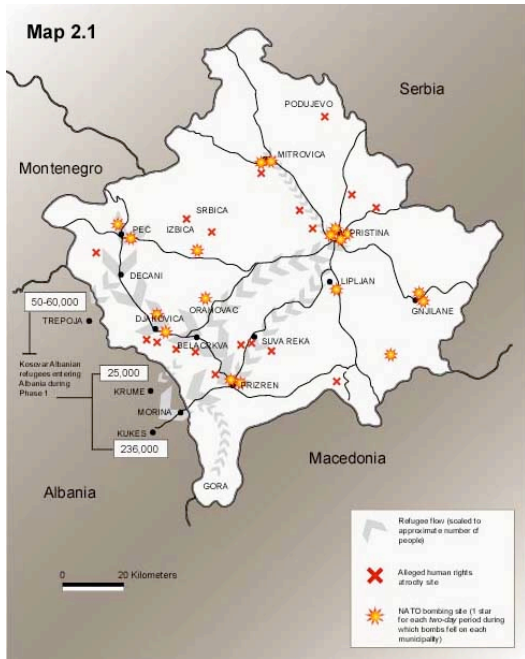
- Letters and Appeals to Consular Officials
- Coordinated Petitions
- Protest Letters, Letter Campaigns
- Forum, Program Proposals

The Role of Science in Collecting and Evaluating Evidence of Human Rights Abuses--Kosovo

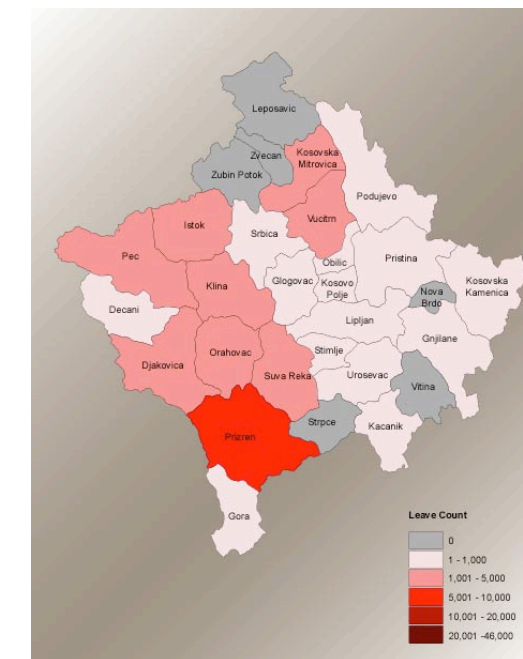
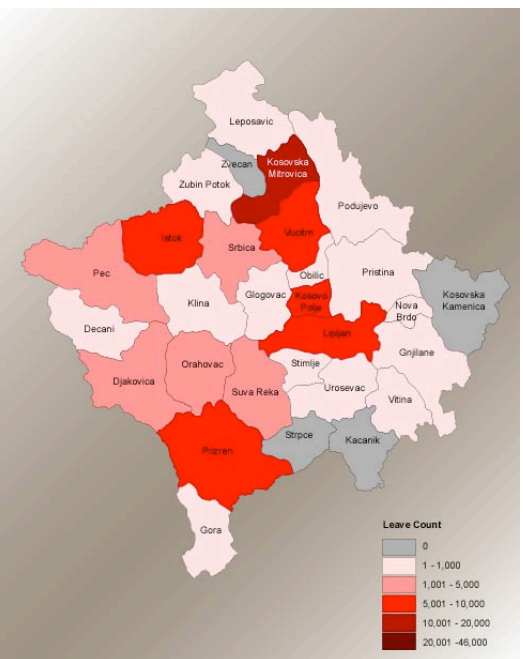
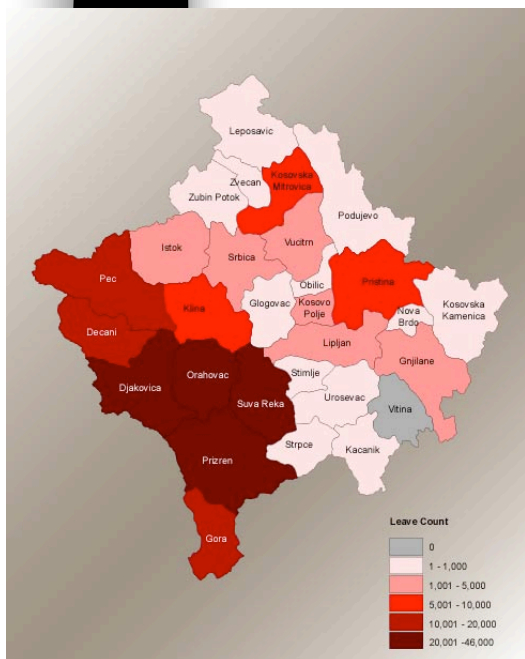
- Project headed by Patrick Ball, Deputy Director of AAAS Science and Human Rights Program
 - Census of 1837 families in 18 camps
 - In-depth interviews of 80 families in 4 camps
 - 19,126 Albanian border guard records documenting the movement of 272,000
 - Daily border counts reported by UNHCR of 402,000 refugees
 - Population survey of 1180 refugee households in Macedonia and Albania



GOAL: correlate movement of refugees with causes.



Policy or Panic? The Flight of Ethnic Albanians from Kosovo, March-May 1999



Truth and Reconciliation Commissions: Find the Truth--Heal the Nation

■ *Guatemala:*

- 7000 interviews
- 88 case studies of massacres, kidnappings and disappearances

■ *South Africa:*

- 22,000 testimonies
- 45,000 reported violations
- 1200 graphs and tables



CEH

Massacre! Tracking the truth and culprits with Chemistry, Molecular Biology, Physical Anthropology, Physics and Mathematics

■ *Tunaja, Guatemala*

- The fate of Rosalio Chingo
- *“Twelve years later, we came along and unearthed this truth and spoke it...for everyone to hear. His family finally could mourn his death openly”*

<http://garnet.acns.fsu.edu/~ss4407/Tunaja.htm>



Massacre! The Annihilation of a Village along the Black River on March 13, 1982--Guatemala

- ***80 women and 100 children assassinated by Civil Guards.***

<http://garnet.acns.fsu.edu/~ss4407/RioNea.htm>

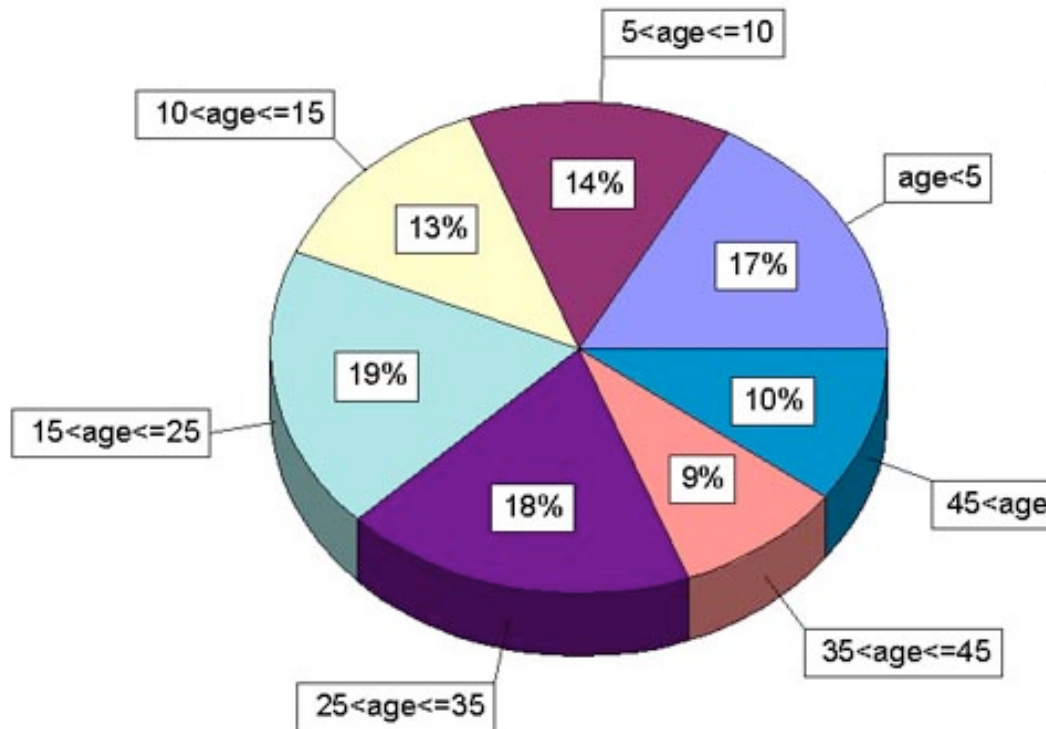


Rwandan Genocide--Statistics of a Mass Grave

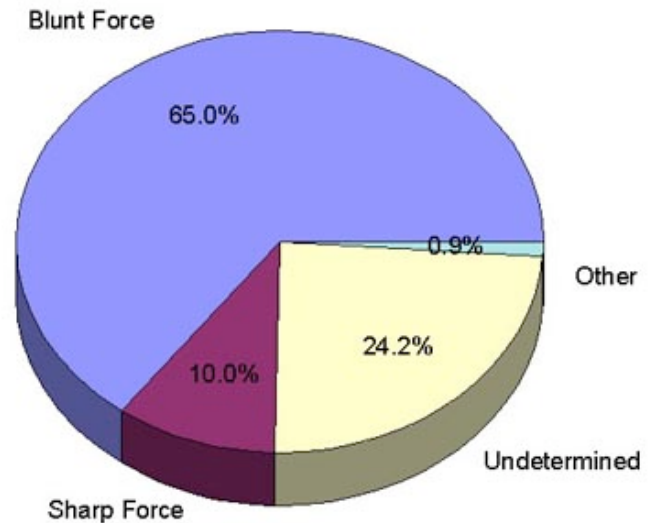
<http://garnet.acns.fsu.edu/~sss4407/Rwanda/RWStats.htm>

■ *The massacre in Kibuye Church*

Age Distribution



Trauma Distribution



AAASHRAN

AAAS Human Rights Action Network

AAASHRAN Archive

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Resources

- ▶ [Analysis of AAASHRAN Alerts \(since 1993\)](#)
- ▶ [Casework Guidelines](#)
- ▶ [Sources of Information](#)
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Recently Issued Alerts

[PALESTINIAN AUTHORITY--ACADEMICS AND GOVERNMENT CRITICS ARRESTED](#)

[RUSSIA—ENGINEER ACQUITTED](#)

[CUBA--PHYSICIAN IMPRISONED](#)

[UKRAINE -- MARINE BIOLOGIST ARRESTED](#)

[TURKEY -- PHYSICIAN ARRESTED](#)

Issues

[U.S.--VISA DECISION REVERSED FOR CUBAN SURGEON](#)

[U.S.--VISA DENIAL TO CUBAN SURGEON](#)



[Send a letter online!](#)

Directory of Persecuted Scientists, Health Professionals, and Engineers

AAAS Science and
Human Rights Action
Network Alerts

From August 1997 to
December 1998

Elisa Muñoz

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AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE

Instruments Impeding Free Exchange: The U.S. Armamentarium

- ***Visa Denials***
- ***Sensitive Countries List***
 - ***Russia, Israel, India, Pakistan, China, Iran, Iraq, Syria, etc...***
- ***Critical Technologies***
 - ***Dual use, encryption, combat boots, etc...***
- ***Economic and Military Embargoes***
 - ***Cuba, India, Pakistan, Iran, Iraq, etc...***
- ***Economic Proscriptions***
 - ***Risk for illegal immigration***
- ***National Security***
 - ***Risk of stealing our secrets***
 - ***Acts of destruction, murder, sabotage***
- ***Criminal***
 - ***Wants to come to do evil***

The Introduction of More Restrictive Measures

- New classifications for material already in the public domain.
- Special identity badges for foreign nationals.
- New restrictions on access to unclassified facilities.
- Attempts to place non-classified facilities under restrictive controls.
- Increased dependence on procedures of doubtful value--ie, polygraph testing.
- New and more draconian classification procedures that threaten to restrict the distribution of scientific information.
- Complex management schemes that further dissipate lines of responsibility and authority.
- Aggressive student and visitor monitoring

LISTS

- ***State Sponsors of Terrorism list (Cuba, Libya, Iran, Iraq, North Korea, Sudan and Syria)***
- ***Non-Proliferation Export Control Posts (China, India, Israel, Pakistan, and Russia)***
- ***Technology Alert list contains 16 categories (munitions, warheads and projectiles, nuclear, missiles, aircraft and missile propulsion, navigation and guidance, chemical engineering and biotechnology, remote imaging and reconnaissance, advanced computers, materials, cryptography, lasers and directed energy systems, acoustic and sensors technologies, marine technology, robotics, ceramics, high performance metals and alloys)***



Instruments Impeding Free Exchange: U.S. Denials to Travel of U.S. Scientists

- ***Treasury Department Licenses for Travel to Cuba***
 - ***General License Requirements***
 - ***Special License Requirements***
- ***Permission for Travel of US Government Scientists to Sensitive Countries***
 - ***Denial for Permission to attend Indian Conferences***

The Dangers to the National Interest

- **Stifle vital international exchange**
 - *non-defense research*
 - *defense-related research*
 - *visitors programs*
- **Impair lab productivity and morale**
 - *create suspicion and resentment*
 - *institutionalize racism*
- **Impose cosmetic solutions while ignoring the real threat**
 - *focus on ethnicity rather than deed*
 - *failure to implement meaningful reform*
- **Denigrate standards of justice and equal protection**
- **Sacrifice the future**
 - *recruitment*
 - *loss of experienced researchers*
 - *declines in appointments and visitors*



Freedom of Exchange: *ICSU*

- ... ICSU , as an international non-governmental body, shall observe and actively uphold the principle of the universality of science. This principle entails freedom of association and expression, access to data and information, and freedom of communication and movement in connection with international scientific activities, without any discrimination on the basis of such factors as citizenship, religion, creed, political stance, ethnic origin, race, color, language, age or sex.
- The Committee on Freedom in the Conduct of Science (SCFCS) [has as] its objectives:
 - ***to safeguard and promote the free circulation of scientists***
 - ***to promote:***
 - ***freedom to pursue science and to publish the results***
 - ***freedom to communicate among scientists and to disseminate scientific information***
 - ***freedom of movement of scientific materials.***



2001 GAO Report to the Chairman, Subcommittee on Military Research and Development, Committee on Armed Services, House of Representatives

Table 1: Ten Candidate Technologies with Known Operational Limitations

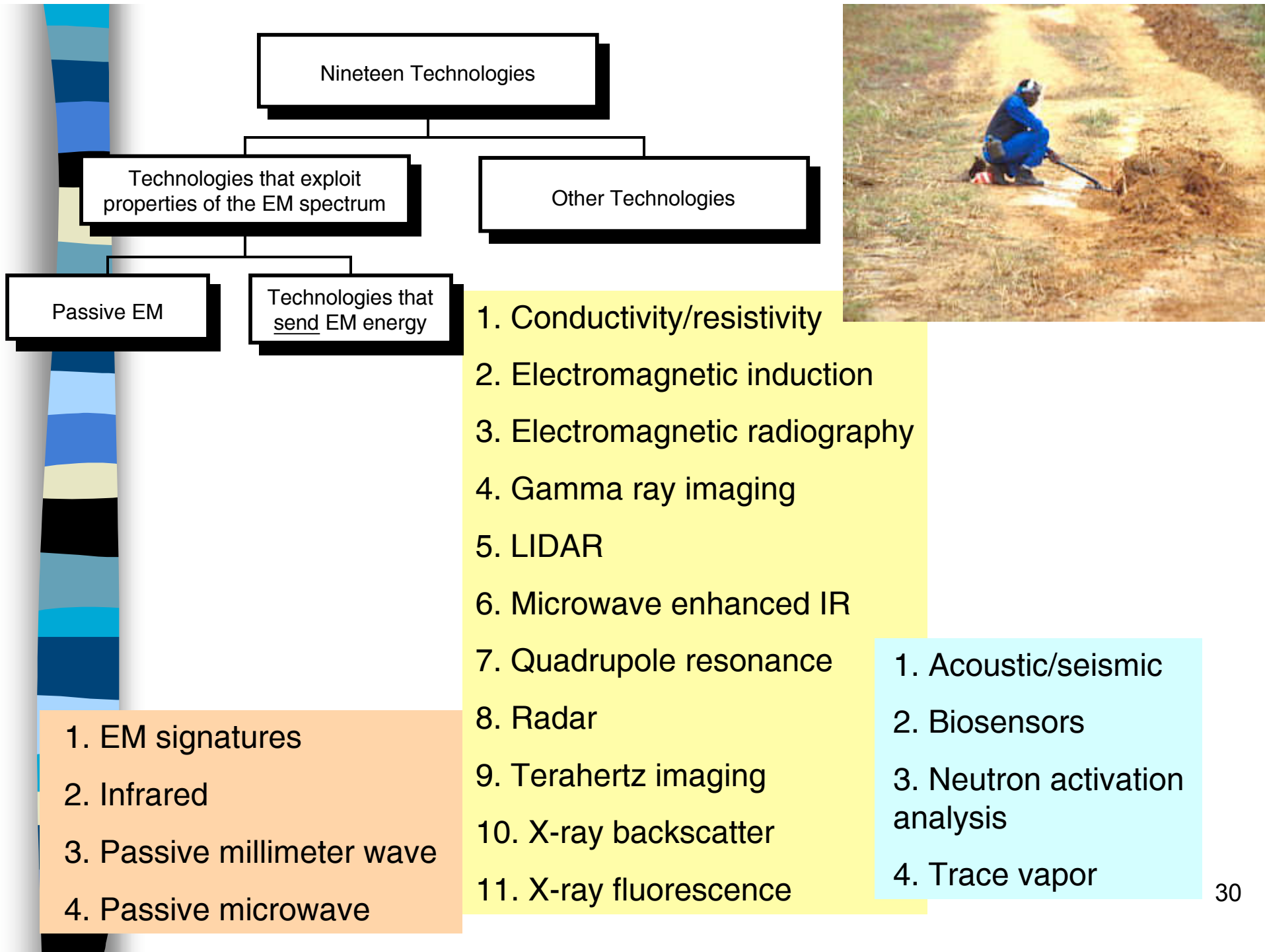
Technology	Known Target and Operational Limitations
Conductivity/resistivity	Standoff, speed
Metal detectors	Standoff
Neutron activation analysis	Standoff, speed
Gamma ray imaging	Standoff, speed
X-ray backscatter	Standoff, depth
Quadrupole resonance	Standoff
EM signatures	Standoff, mine types
Passive microwave	Standoff, speed
Trace vapor	Standoff
Microwave enhanced infrared	Mine types

Source: GAO analysis.



2001 GAO Report to the Chairman, Subcommittee on Military Research and Development, Committee on Armed Services, House of Representatives

Numerous questions about the physics-based capabilities of the various detection technologies make it difficult, if not impossible, to evaluate them against mission needs at the present time. Although DOD has invested funds in basic research to address some of its questions, its efforts are expected to end after fiscal year 2001. In addition to providing support to technology evaluations, a sustained basic research program is needed to support DOD's ongoing efforts to develop better systems.



“These inventors do produce good equipment (very often totally impractical, with millions of dollars wasted on huge research and development programmes, without any practical reference to the man on the ground). A number of these inventors very rapidly get the ear and support of a high placed politician or political body. These people, who frequently have no direct experience of the problem, believe all the claims of the inventor.”

CLAIM AND REALITY: MECHANICALLY ASSISTED DEMINING

By Colonel L Dyck

IHDD Team Operations Advisor and Director: Operations, Mine-Tech



***“ We are amputees.
Before we were soldiers,
Members of different armies
and blew the legs
and arms and eyes
off one another. Now we teach and learn together
in the Center of the Dove.***

We beg the world to stop making mines.

We beg the world to stop laying mines.

We beg for funds for clearing mines,

so that we can rebuild our families,

our village, and our country again.”