



***Joint ISTIC-UNESCO Conference on “Enculturation of Ethics  
for  
Scientists and Engineers for Sustainable Future”***

**Social Responsibility of Scientists and Engineers**

**Alain Pompidou, President of COMEST**



## Definitions

- Engineering is the professional art of applying science to the optimum conversion of the resources of nature to the uses of humankind.  
(Encyclopedia Britannica)
- Engineering is the application of science and mathematics by which the properties of matter and the sources of energy in nature are made useful to people (Merriam-Webster Dictionary)
- Article 1(a)(i) of the 1974 Recommendation on the Status of Scientific Researchers, science “signifies the enterprise whereby mankind, acting individually or in small or large groups, makes an organized attempt, by means of the objective study of observed phenomena, to discover and master the chain of causalities”.



## Science, Engineering and Responsibility

Tremendous progress in the areas of engineering, technology, and science (e.g. genetic engineering, biotechnology, nanotechnology, information technologies, artificial intelligence)



Enormous Amount of Power



Responsibility



Obligation and Accountability



## Why Responsibility Matters

- Harm to individuals and society
- Impact on states, cultures, the environment and the entire planet
- Direct damage to science itself
- Damage to science through undermining the public's trust to science



## Framing the Ethical Agenda for Scientists and Engineers

- Which principles?
- Which implementation mechanisms?
- How to embed the principles and mechanisms in routine practice?



## Social Responsibility: a Key Ethical Principle Already Enshrined in International Normative Documents

- Commitment from the scientist/engineering profession to place the public safety and interest ahead of all other considerations and obligations
- Engineers/scientists to show due regard for the consequences of their conduct for the well-being of others as well as for the impact of their work on society
- Engineers/scientists to make determined efforts to find all of the relevant facts concerning the possible outcomes of the choices available that may positively and negatively affect society



## Social Responsibilities of Scientists/Engineers (examples)

- Ensure the safety and well-being of the public
- Ensure that society's funds and resources concerning technology are well used
- Disclose all known or potential conflicts of interest to their clients by promptly informing them of any business association, interest or other circumstances which could influence or appear to influence their judgment of the quality of their services
- Prevent and report unethical conduct
- Integrity
- Honesty



## The Ethical Dimension

- The purpose of engineering/science ethics is to increase the skill of moral judgment and to develop the moral autonomy of the engineer/scientist
- To improve the skills necessary to think critically about the ethical aspects and consequences of engineering design and work
- To compliment the technical knowledge derived from engineering education with the development of moral values and the capacity for sound moral judgment
- To compliment the technical perspective with ethical analysis that leads to more responsible decision making
- To increase knowledge about the duties, obligations and moral responsibilities of engineers in the practice of their professional labor
- To promote the knowledge and development of professional virtues in order to produce excellent engineers that are committed to, and contribute to, social progress and social justice



# Some examples of COMEST work



## Science ethics

Aim: to pursue reflection on the question of science ethics



- Consultation meetings in different regions (2006)
- Collection, analysis and clearing house of existing codes of conduct through the GEObs database. (The database provides a selection of Codes of Conduct related to the ethics of science and technology issued by professional entities in the private and public sectors.)



# GEObs

Global Ethics Observatory - Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils ?

http://www.unesco.org/shs/ethics/geo/user/?action=search&lng=en&db=GE05

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**Anti-Doping**

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**Other SHS Themes**

- Human Rights
- Philosophy
- Physical Education and Sport
- Social Transformations

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**Worldwide**

- Africa
- Arab States
- Asia and the Pacific
- Europe and North America
- Latin America & the Caribbean

## Database 5: Codes of Conduct

Find a code of conduct

There are currently 151 codes of conduct registered in the database.

**Search**

**Region**  ▼

**Country**  ▼

**Geographical coverage of the code**

Any

Global

Regional

National

**Profession and/or discipline**

▼

**Nature of the code**

Any

Aspirational

Educational

Regulatory

**Field of activity**

▼

**External principles**

▼

**Internal principles**

▼

Definitions of terms used in the database on codes of conduct and codes of ethics related to science and technology

• Codes

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# GEObs

Global Ethics Observatory - Mozilla Firefox

http://www.unesco.org/shs/ethics/geo/user/index.php?keywords-COD\_TITLE-COD\_PROVIDER=&field-CRN\_RE

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Human Rights  
Philosophy  
Physical Education and Sport  
Social Transformations

**Worldwide**  
Africa  
Arab States  
Asia and the Pacific  
Europe and North America  
Latin America & the Caribbean

New search | [Change search criteria](#)  
Codes of Conduct 1 to 10 of 151 codes of Conduct found Number of results per page 10  
Page 1 of 16 1 2 3 4 5 6 7 8 9 10 11

ID	Title of the Code	Provider of the code	Profession and/or discipline	Country	Geographical coverage
<a href="#">View</a> 20	Code of Ethics and Professional Conduct	Association of Computing Machinery	Computing professionals	United States of America	Global
<a href="#">View</a> 155	Rules of Good Scientific Practice	The Deutsche Forschungsgemeinschaft (German Research Foundation)	Researchers	Germany	National
<a href="#">View</a> 116	ACEA Code of Ethics	Association of Consulting Engineers	Architects, engineers and related professionals	Australia	National
<a href="#">View</a> 52	American Council of Engineering Companies Ethical Guidelines	American Council of Engineering companies	Architects, engineers and related professionals	United States of America	National
<a href="#">View</a> 53	American Medical Association Code of Medical Ethics	American Medical Association	Medical doctors	United States of America	National
<a href="#">View</a> 91	American Oil Chemist Society Code of ethics	American Oil Chemist Society	Chemists	United States of America	National
	American Society of	American Society of	Agronomists	United	

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# GEObs

Database 5: Codes of Conduct - Mozilla Firefox

http://www.unesco.org/isha/ethics/geo/user/index.php?action=view&db=GEO&id=70&lng=en&criteria=Tj%3D

Global Ethics Observatory (GEObs)

Database 5: Codes of Conduct

print | email data

ID	70
Title of the Code	Association of Civil Engineers of Honduras Code of Ethics <a href="#">Link to Code</a>
Provider of the code	Association of Civil Engineers of Honduras
Country	Honduras
Geographical coverage	National
Profession and/or discipline	Civil engineers
Nature of the code	Regulatory
Membership of organization	members of the association
Commitment to code	Mandatory
Sanctions	Yes
Disciplinary body	Yes Honor Tribunal of the Association of Civil Engineers of Honduras
Fields of activity	Engineering
External principles	Public safety and welfare <input type="checkbox"/> Prestige of the profession <input type="checkbox"/> Work for the general interest <input type="checkbox"/>
Internal principles	Honesty <input type="checkbox"/> Integrity <input type="checkbox"/> Work only in area of expertise <input type="checkbox"/> Objectivity <input type="checkbox"/> Respect property rights <input type="checkbox"/> Not work for/with companies of doubtful character or with aims which are against personal conviction (conscience) <input type="checkbox"/>

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## Teaching of ethics

Working Group on the Teaching of Ethics (2003)

Aim: provide advice on how to integrate ethics  
and responsibility into scientific training.

Report on Teaching of Ethics 2003

- Survey of existing programs
- Analysis of their structure and contents
- Curriculum advice on how to integrate ethics into scientific education

Basis for ethics education programme



## Environmental Ethics

### Experts Group on Environmental Ethics

#### Aims:

- clarify what is the state of the art in environmental ethics
- examine what are issues for international policy

#### Meetings:

Paris: September 2004

New Orleans: November 2004

2007



2007

Policy document

Not formally adopted



# Energy

COMEST sub-commission on energy

Aims:

- pose the ethical problems of energy
- foster dialogue between consumers and producers
- promote essential balance between economic needs, human and environmental necessities

Bangkok office

Meeting:

Paris: 2-3 November 2000

2004

The Ethics of Energy: A  
framework for action



## Ethics of Fresh Water Use

COMEST sub-commission on Ethics of Fresh Water Use

Aims:

- stimulate the implementation of ethical principles
- shape the society – best ethical practice is recognised and practised

### Meetings:

Paris: 28 October 1998

Paris: 10 January 1999

Oslo: 26 April 1999

Almeria (Spain): 31 July and 1  
August, 1999

2000

The Ethics of Freshwater use : A Survey

2004





# Nanotechnologies and Ethics

COMEST group of experts (2005)

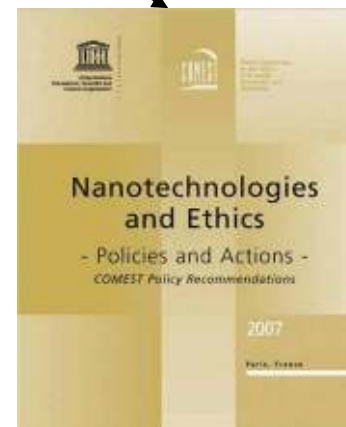
Aims:

-to analyse the ethical dimensions, reviewed  
the state-of-the-art in ethical considerations of nanotechnologies.

2007



2007





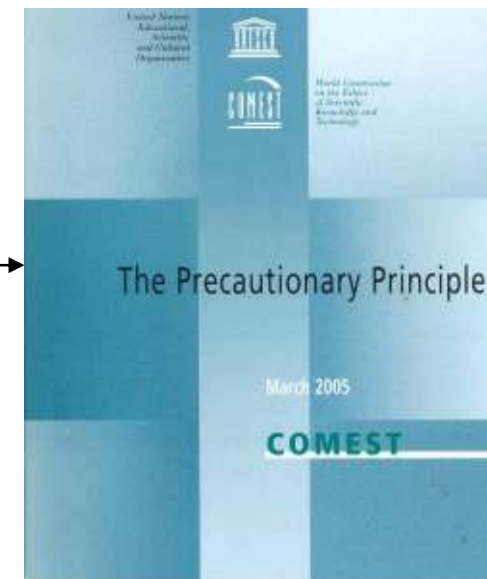
## Precautionary Principle

Working Group on the Precautionary Principle

→ Aim: to clarify the PP for decision makers and scientists

March 2005:  
COMEST Bangkok

2005





## Ethics of Outer Space

- awareness raising concerning ethics of outer space
  - 24 October 2004: Paris: Conference “Legal and ethical framework for astronauts in space sojourns”



- 26-27 October 2006: Paris: Conference “Legal and ethical framework for space exploration”