



Consiglio Nazionale delle Ricerche



Festival della Scienza

SCIENCE IN SOCIETY RELATIONSHIPS

Capacity Building

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Italian National Research Council (CNR)

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Index

- **Science & Society Relationship: a strategic issue for RO**
- **Strategies**
- **Dissemination & Outreach**
 - Why
 - How
 - By means of...
 - People
 - Evaluation
- **Outreach Plans – Case study**
- **European Survey**
- **Next ...**



Science and Society Relationship

a strategic issue in science policy for Research Organizations

Responsibility

→ RO are mainly financed by **tax payers**

New
Investments

→ Enhancing the dialogue between the scientific community and **politics** as an instrument to increase funding in Science and Innovation for European Countries' growth

New
Researchers

→ attracting graduate students towards scientific careers

Meet the urgent needs of Society and Scientific Community

Public Awareness

→ Bridging the gap between science and society, to...

- Promote a better quality of life → spreading innovative solutions and new technologies
- Enable people to approach the deep implications of science into their daily life → ***science-attentive society*** and ***better understanding of science***
- Foster the interest of Companies in Science and Innovation → dissemination as a part in the ***chain of innovation***
- Orientate the new generation towards science → ***new talents***

Strategies

- Invest into **Outreach Plans** → setting up dedicated structures and allocating resources (money and people)
- Introduce **routines** and **recommendations** on how to manage those relations

Dissemination and outreach activities as a valuable part of Researcher's job

- **Sharing best practices** → Identify, enhance, standardize and spread best practices in order to reinforce the ERA

Outreach and Dissemination Why?



SiS is essential in the
“Chain of
Innovation”

Knowledge as
“*common property*”
of the Scientific
Community and the
Society

Outreach and Dissemination How?

TARGET → Everyone!

Students

Mass
Media

Curios

Families

Specialists

Entrepreneurs
and Companies

Decision Makers
and Institutions

A “melting pot” of different cultures, approaches, languages and
attitudes

Debates

Labs

Performances

Workshop

Multimedia

Shows and
Theatre

Museums

Scientific
Cafe

Interactive
Exhibition

Conferences

Hands on
Activities

... Efforts for a science-oriented society ...

Preparing new generation for science and industry

Dialogue with families and youths

- Attraction of youth
- Acceptance by families

Strict collaboration with Education



By means of ...



- **Dedicated Structures** → Setting up offices (besides Press Offices) to manage outreach activities, education and dissemination (from TTO to KTT)
- **Dedicated Budget** → % (+ gathering of dissemination budget already included in EU funded projects)
- **People** suitably trained, qualified and evaluated

People

Training



Integrate curricula with skills on *HOW* to manage SiS

SiS capabilities in the DNA of the next generation of researchers

People

Career Recognition

- Accountability
- Dissemination as part of a research job → outreach activities considered as publications and patents
- Instruments: credits, fees, incentives, curricula,
- Visibility of researchers



Evaluation

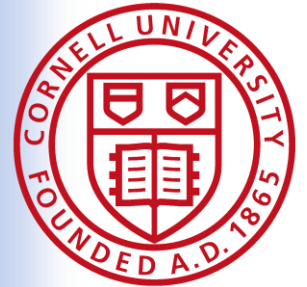
RO should ...

- Establish **criteria** and **procedures** to measure quality and impact of dissemination and educational activities
- Promote assessment according to defined **standards** and **social requirements**
- Analyze:
 - impact on different publics,
 - performance of single activities and single institutions,
 - quality of actors and communicators
- Collect and identify **best practices** and **best communicators**
 - *Prizes and recognition*





Outreach plan



CASE STUDY



University of California
Berkeley





NSF's commitment to broadening participation is embedded in its **Strategic Plan** through a **variety of investment** priorities

- Integrating research with **education** and building capacity
- Expanding efforts to **broaden participation** for social cohesion;

Merit review criteria, which all proposals must address explicitly:

- 1• How well does the activity **advance** discovery and understanding while promoting teaching, training and **learning**?
- 2• How well does the proposed activity **broaden the participation**
- 3• To what extent will it **enhance the infrastructure for research** and education, such as facilities, instrumentation, networks and partnerships?
- 4• Will the results be disseminated broadly to **enhance** scientific and technological **understanding**?
- 5• What may be the **benefits** of the proposed activity **to society**?





- National Science **Festival Network**, StarTalk **Radio Show**, Research **Video News** → **General Audience**
- **Teen** Café Scientifique
- SciGirls → A new PBS series targeting kids ages eight to 12, designed to spark **girl's curiosity** about science, technology, engineering and math.by scientific mentoring
- A Science Education Center for the **Third Age** → The goal of this project is to enhance the infrastructure for informal science education for this large, growing and often underserved population
- The YardMap Network: **Social Networking** for Community Science → The goal of the project is to create online learning communities that move people from basic and intermediate levels ecological understanding to advanced levels .
- My Climate, My Community: Sustainable Climate Change Exhibits for **Rural Audiences**

2 - University of Berkely – California

1. Strategies to make the University's resources more **available to the community** at large and **to our educational** partners;
2. To provide **leadership in research, evaluation and practice** that advances knowledge about how and why students excel;
3. To address **the challenge of diversity** by increasing the enrollment of African American, Chicano/Latino, and Native American students at Berkeley and throughout the University of California system.

Outreach activities should be seen **as a central part of the campus's mission.** Participation in outreach work should be fostered at all levels of the organization and **accountability** for the success of this work should be seen as a campus-wide responsibility.

- Outreach work should be structured to enable and support productive, meaningful collaborations among campus units and **education partners**
- In designing and building a new campus **infrastructure for outreach** programs, the campus should seek both clarity and flexibility → **New organizational models**
- Recognition of the contribution that **Outreach work** can make to career opportunities and **personal development**
- Emphasize the need for rigorous **evaluation** and **measurable results**.
- Promote **excellence** along with administrative **efficiency**.

INSTRUMENTS

**Programs - WEBSITES – CURRICULUM - DIGITAL LIBRARIES –
EXHIBIT DESIGN -WEBCAST.BERKELEY**



**University of California
Berkeley**

3- Massachusetts Institute of Technology (MIT)



MIT K-12 Educational Outreach Programs

MASSACHUSETTS INSTITUTE OF TECHNOLOGY



MIT
OUTREACH DATABASE

your connection to outreach opportunities at MIT

- Municipal Committees → MIT representatives **routinely serve** on local committees and task forces addressing **municipal public policy issues**... regular meetings with staff from the Public Works Department, Traffic, Parking, and Transportation Department, Community Development Department, Water Department, and the City Electrician to discuss construction coordination and mitigation.
- **MIT staff** engage in extensive ad hoc **discussions** with City staff on **Institutional** and **City projects**.
- **MIT WORLD** → MIT World is a **free and open site** that provides on demand video of significant public events at MIT. MIT World's video index contains more than 700 videos → **Web tv**

4 - STANFORD UNIVERSITY

- Stanford is one of the first U.S. universities to create a **permanent office** dedicated to addressing *societal concerns and the overall decline* in scientific literacy of society
- Stanford University's **Office of Science Outreach (OSO)** **encourages** and **assists** Stanford faculty to engage in science outreach - organized activities targeted at our nation's youth, school teachers, and general public that will increase their interest, understanding, and involvement in math, science, and engineering.
- OSO serves faculty by assisting them in **creating** outreach project ideas and proposals, identifying potential **partners** for them and facilitating information and **resource sharing** among all of the University's science outreach programs. In addition, the OSO directs several programs in which Stanford faculty and their students can participate.

- **STANFORD CONTINUING STUDIES** → Courses are designed to **cultivate learning** and enrich the **lives of adults** in the Bay Area... open to everyone.
- **EPGY SUMMER INSTITUTES** → Students live on campus, experiencing academic enrichment, a **taste of college life** at Stanford, and the opportunity to meet others with similar interests and abilities.
- **QUAKE-CATCHER NETWORK** → collaborative initiative for developing the world's largest, low-cost seismic network by utilizing sensors in and attached to internet-connected computers **in homes and schools**.
- **FOLDING@HOME** → distributed computing project run software to make one of the largest supercomputers in the world to help calculate how proteins fold (or misfold). Every computer that participates brings the project closer to its goals.
- **USA SCIENCE & ENGINEERING FESTIVAL**

UNIVERSITY OF WISCONSIN

Outreach as a mission...

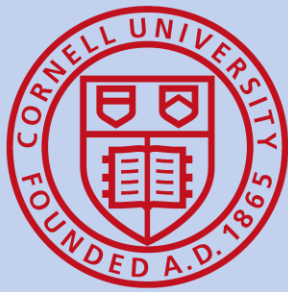
- For more than a century, the university has been guided by the *Wisconsin Idea*, a tradition first stated by UW President Charles Van Hise in 1904

“Never be content until the beneficent influence of the university reaches every family in the state”

Programs → For students, faculty and staff

- Community outreach
- Continuing education
- International resources
- Youth programs
- **Business** and **industry**





CORNELL UNIVERSITY

Outreach programs **solve real-world problems** by linking people to Cornell's rich resources.

Students, faculty, and staff **share their expertise and energy** with schools, businesses, government, community organizations, individuals, and families.

Defining questions for future recommendations – European survey

What should involve the content of a survey?

Some elements to observe...

STRATEGIES

- *Do MO have outreach plans?*
- *How are they structured?*

RESOURCES

- *What is the total amount of resources (money and people)?*
- *How are they allocated and managed?*

PEOPLE

- *Do MO train people to SiS?*
- *What are the job opportunities and careers?*
- *Are SiS activities accounted and evaluated?*



QUALITY of ACTIVITIES

- *Are there best practices which can be replicated in other contexts?*

SOCIAL IMPACT and FEEDBACK

- *How to measure quality of those initiatives?*
- *Which are the criteria and the indexes to use?*

Define questions for future recommendations – European survey

A survey should consider those aspects referring to different regional and national realities all across Europe.

**Survey results will be discussed and presented during the
2nd MO Forum workshop**



3 - 4 November 2010 in Genoa, Italy

Hosted by



Festival della Scienza



Consiglio Nazionale delle Ricerche

See You at the **Genoa Science Festival!**

29 october – 7 november 2010 “HORIZONS”



Festival della Scienza

*“I was recommended to come!
Never seen something like that, a
city totally involved in science!”*

Freeman Dyson

*“In 2005 I was asked to speak at the science
festival in Genoa (...) and the atmosphere in the
city was amazing – the excitement at the
lectures and in the streets was palpable.”*

Brian Green (New York Science Festival)

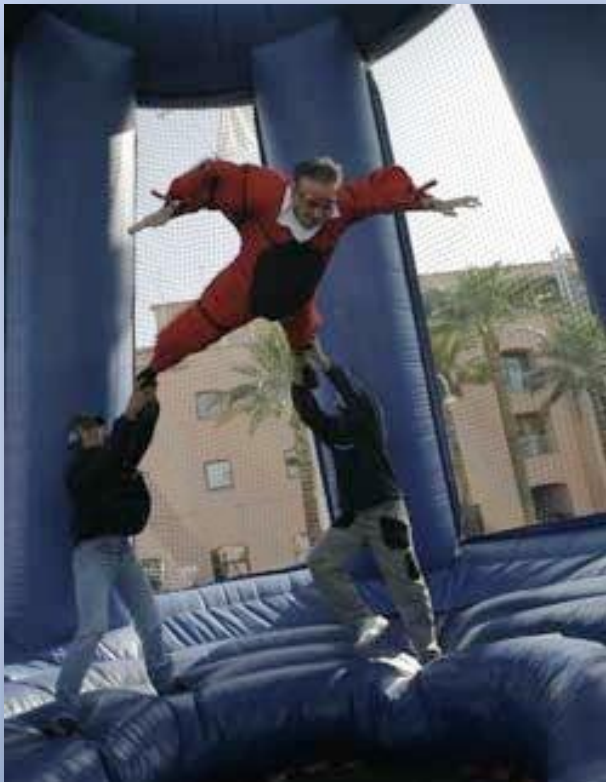
*“I have been to your Festival...it was the
inspiration to do what i’m doing in the USA*

... I hold your Festival up as a model”

**Larry Bock (Organizer of the USA Science &
Engineering Festival)**

*“Scientific exploration deserves a
celebration, and in Genoa, they’re doing so
with great style”*

Science Magazine, Nov. 2007



Grazie

GRAZIE

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