THE ITALIAN SCHOOL-WORK ALTERNATING SYSTEM

A model of "Responsible Research and Innovation" at the Istituto Superiore di Sanità

Paola De Castro, Cristina Agresti, Elena Ambrosini, Maria Cristina Barbaro, Roberta De Simone, Eugenio Sorrentino, Sandra Salinetti

RRI-SIS 2017
International Conference on
RESPONSIBLE RESEARCH AND INNOVATION IN SCIENCE, INNOVATION AND SOCIETY 2017

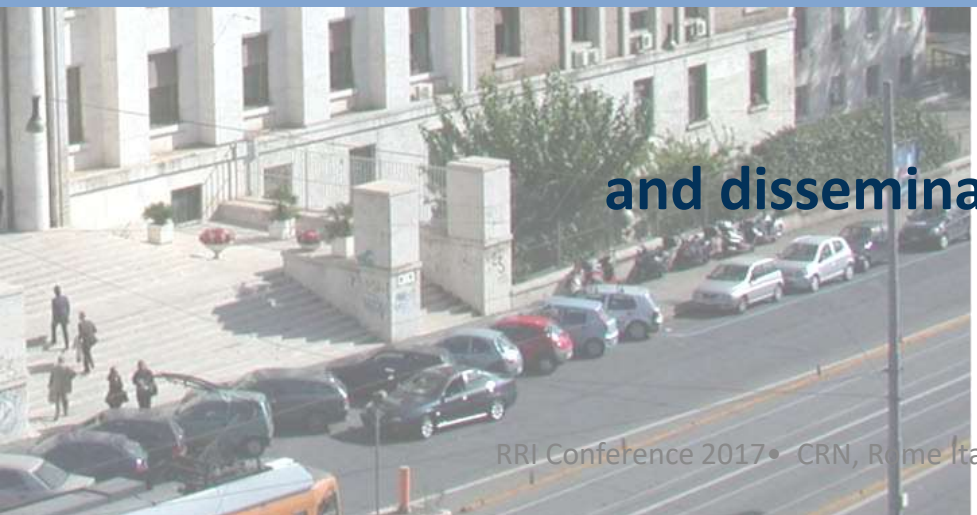
CNR, Rome, Italy ● September 25-26, 2017

Istituto Superiore di Sanità

Main governmental research body for public health in Italy (about 2000 people)

MISSION

Promotion and protection of national and international public health through research, surveillance, regulation, control, prevention, communication, counselling and training



produces knowledge

and disseminates it to different stakeholders

HEALTH FOR ALL

General objectives of the presentation

1

show how researchers

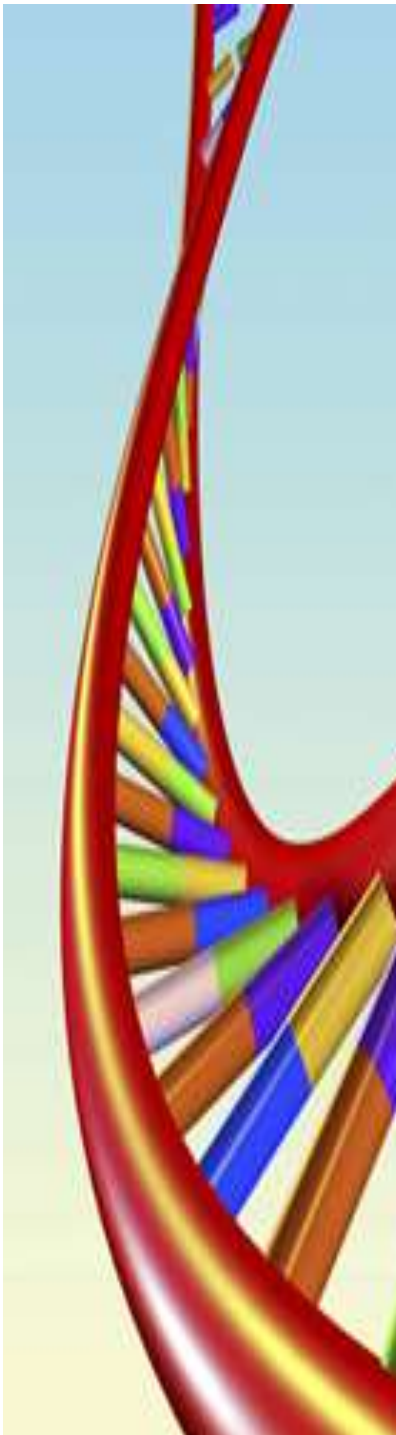
can contribute to fill the gap between science and society by **communicating science outside the scientific community**

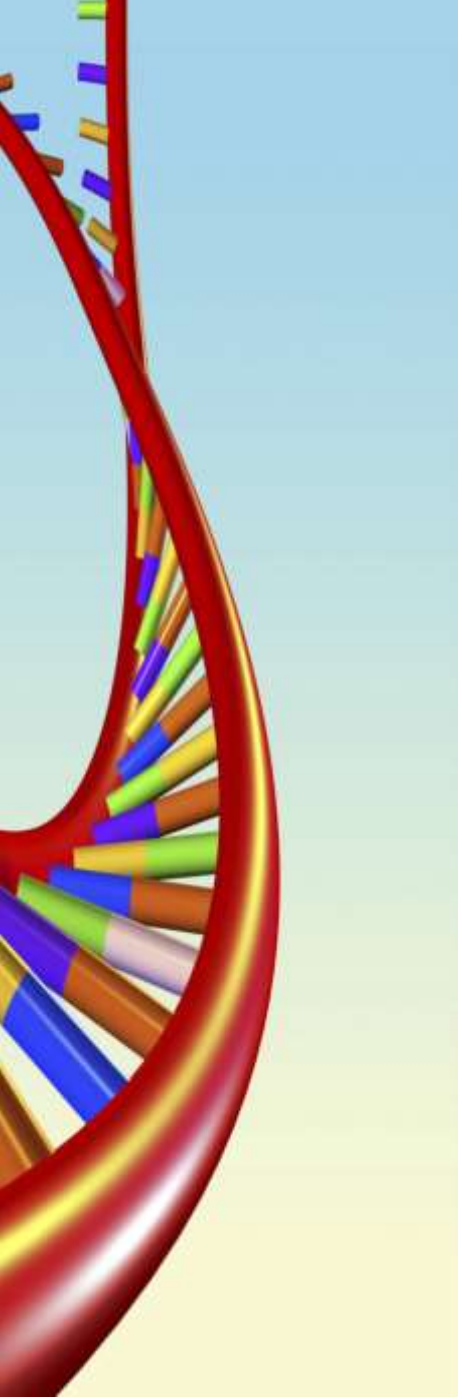
→ *use strategies, tools and languages that can be easily understood by lay people*

2

demonstrate the value

of a **multidisciplinary approach** to scientific research which needs integrate scientific and social-cultural knowledge for a win-win agreement between science and society





Specific objective of the presentation

Show the implementation of RRI values through SCHOOL WORK ALTERNATING SYSTEM

- Take **responsibility** to communicate science
- Focus on a **holistic & sustainable approach** to address new challenges in science literacy
- Foster more **accessible, better adapted** scientific information dissemination systems

A new challenge

Responsible Research and Innovation (RRI)

- an **approach** that anticipates and assesses potential implications and societal expectations, with the aim to foster the design of **inclusive and sustainable** research and innovation

- **all societal actors** (researchers, citizens, policy makers, business, third sector organisations, etc.) are involved to **work together** in order to better **align** both the process and outcomes of research and innovation with the values, needs and expectations of society

Framework: changing scenarios

The past

Researchers were concerned with the **dissemination** of scientific information only **among peers…**

Ivory towers, Publish or perish, Impact factors

Other stakeholders that would most benefit from research results were generally **disregarded**

Policy makers, General public, Students

The present

Scientists need communicate science **beyond the scientific community**

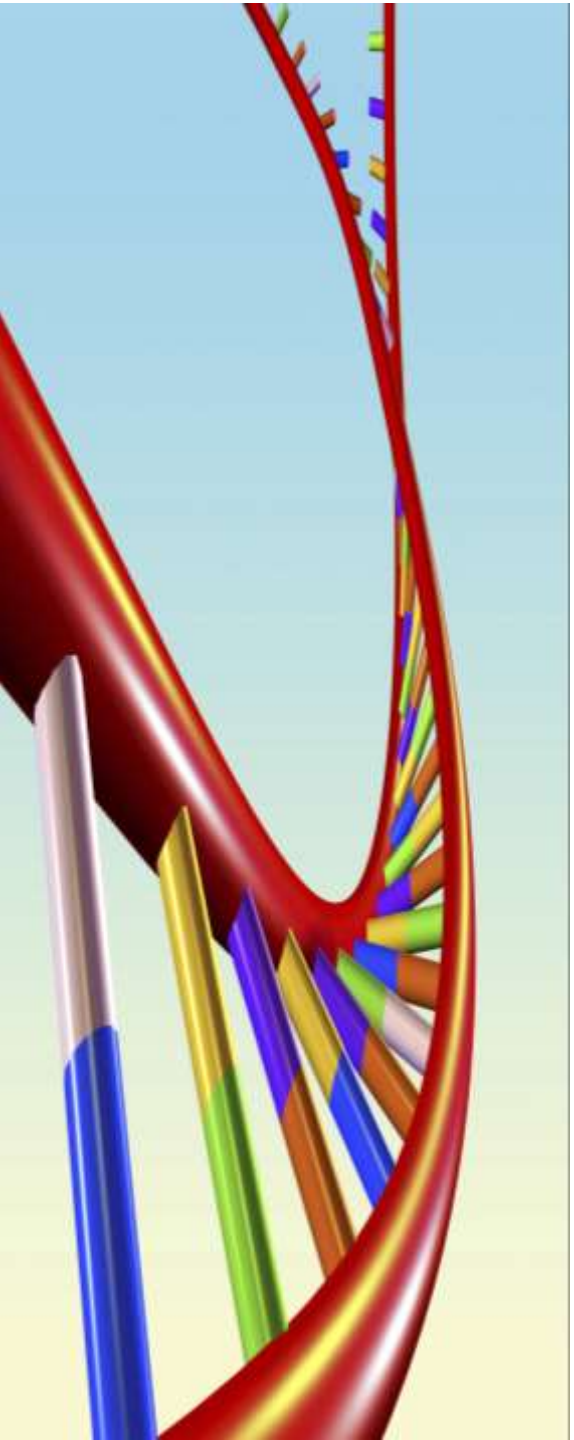
Citizens become part and parcel of the knowledge dissemination cycle, widely facilitated by digital technologies

→ → → Responsible Research and Innovation

The key message

"it is important to stimulate researchers to develop responsible and innovative approach to science communication, addressing different stakeholders, as an integral part of their research commitment"

How?



Background: selection of initiatives

promoted by
National Institute of Health (ISS) within national and international partnerships

To show how researchers
can be engaged on different grounds
under the lens RRI
to foster science literacy

Ask researchers to…

engage in writing books for students and teachers…

ISS has been publishing handbooks for schools since 2001

Ask researchers to…

take part in workshops and meetings addressed to students & teachers

scuola &salute

Since **2010** ISS has been organizing workshops ***Tuesday School &health*** on health literacy addressed to school teachers

18 workshops, **40 researchers** , **80** teachers

Conferences and meetings addressed to school students

20 researchers, **400** students

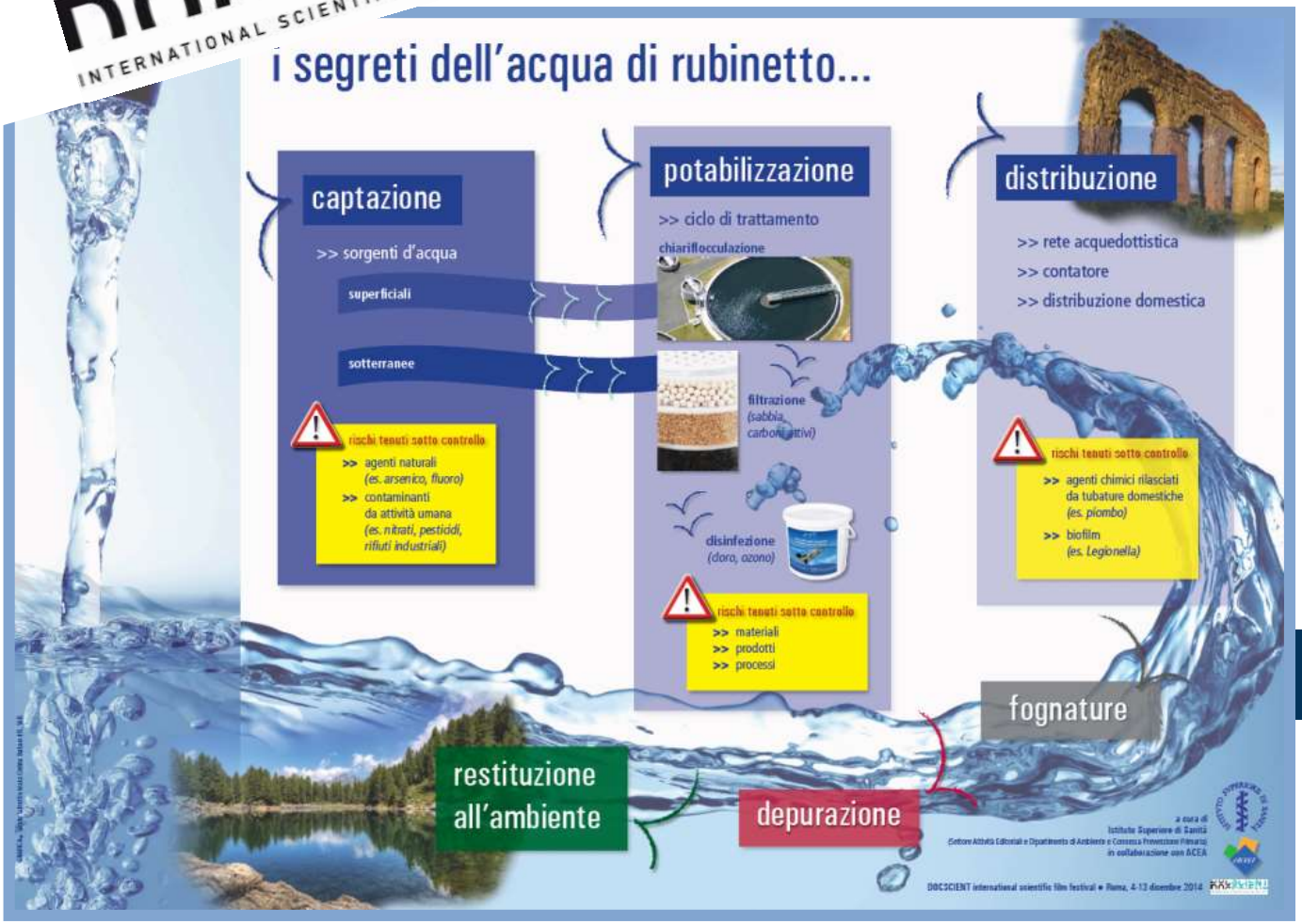
Ask researchers to take part in exhibitions for the general public

ISS at
Science Pic Nic
Warsaw, 2011, 2014

Games to involve the general public on the importance of correct life styles

Mediterranean diet, physical excercise, etc.

INTERNATIONAL SCIENTIFIC FILM FESTIVAL 2014



In 2014,
ISS entered
a network
of academic and
research
institutions to
promote scientific
culture

DOCSCIENT

Workshops and Labs on drinkable water

Ask researchers

to take part in … Science Festivals

In **2015** and **2016, ISS** took part in
Genoa International Science Festival and organised
Interactive initiatives in current scientific issues

8 paths
54 researchers
300 students

2015

2016

EAHIL Conference
Rome, Italy, 11-13 June 2014

e-Bug

European project

a web tool to empower students on antibiotic use

Educational resource on microbes, infections, vaccines, and prudent antibiotic use.

Paola De Castro, Maria Cristina Barbaro, Sandra Salinetti *(Publishing Unit)*
Annamaria Carinci, Annalisa Pantosti *(Dept. of Infectious, Parasitic and Immune-Mediated Diseases)*
Istituto Superiore di Sanità • Rome, Italy

Introduction

Health information literacy is pivotal to promote **life skills** and **healthy styles** among different target audiences. Librarians, editors and research scientists can develop collaborative initiatives addressed to **teachers** and **school children** to improve awareness on health information literacy and contribute to create informed and empowered citizens. In this context, the **European project e-Bug**, developed by the Health Protection Agency in the UK, represents an interesting case. It provides **school education resources to face antimicrobial resistance**, an emerging key issue in public health.

Objectives

- Improve young people's understanding of the importance of **responsible antibiotic use**, thus helping society as a whole.
- Offer school librarians **sound and reliable information** to help students in their study **on microbes, hygiene, spread and prevention of infections**.

Methods

Educational packs on microbes, hygiene, spread and prevention of infections, together with a **website** with **interactive games** allow students to **learn** about responsible antibiotic use **while having fun**. The **Istituto Superiore di Sanità**, as Italian e-Bug partner, **translated and adapted all web material** to fit contents to the Italian context and **disseminated e-Bug** project **in Italy** through participation in:

- conferences
- organization of meetings
- publications
- production of leaflet.

Conclusion

Now e-Bug project consists of a consortium of **28 countries** thus guaranteeing a wide diffusion throughout Europe.
During 2015 Italian e-Bug website had more than **3600 visits**.

www.e-bug.eu

E-BUG, a game to empower students on prudent use of antibiotics (microbiology)

OUR COMMITMENT
Create, translate and adapt scientific contents in a different context

CASA Project www.casaproject.info

C. A. S. A.

Partners

Project Ownership:THB

European Researchers' Night

EC-RRI project to discover science, meet researchers and have fun!

ISS took part in this initiative in 2016 and 2017

Over 50 events (conferences, guided tours, exhibitions) **involving over 1.000** people and **250** researchers

School-work alternating system

Italian Law 107/2015 “The good school”

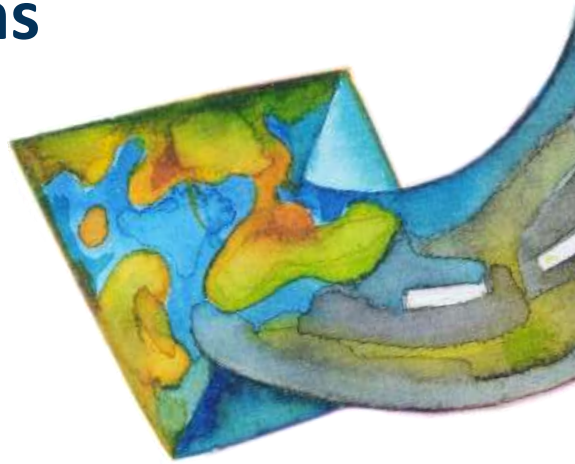
Innovative teaching methodology requiring high school students to spend a period of time in a workplace to contribute orienting them towards responsible future choices

It envisages **specific agreements** between schools and private or public bodies, including research institutes to carry on

school-work alternating programs

ISS participated in such programs since 2016

- Pilot project → **4 schools**



School-work alternating system

ISS project

Multidisciplinary
approach

Red thred
scientific method

Communicate science...
outside the scientific arena

Pilot project started in 2015...

School-work alternating system

Which advantages?

Integration and aggregation

Inside and outside the institution

allows to

- **promote new value-centred culture**
- **maximise researchers training ability**
  by investing in a training alliance addressed to school students
- **improve relationships within the geographical area**
  by creating new values and awareness on research institutes
- **increase awareness on researchers social responsibility**

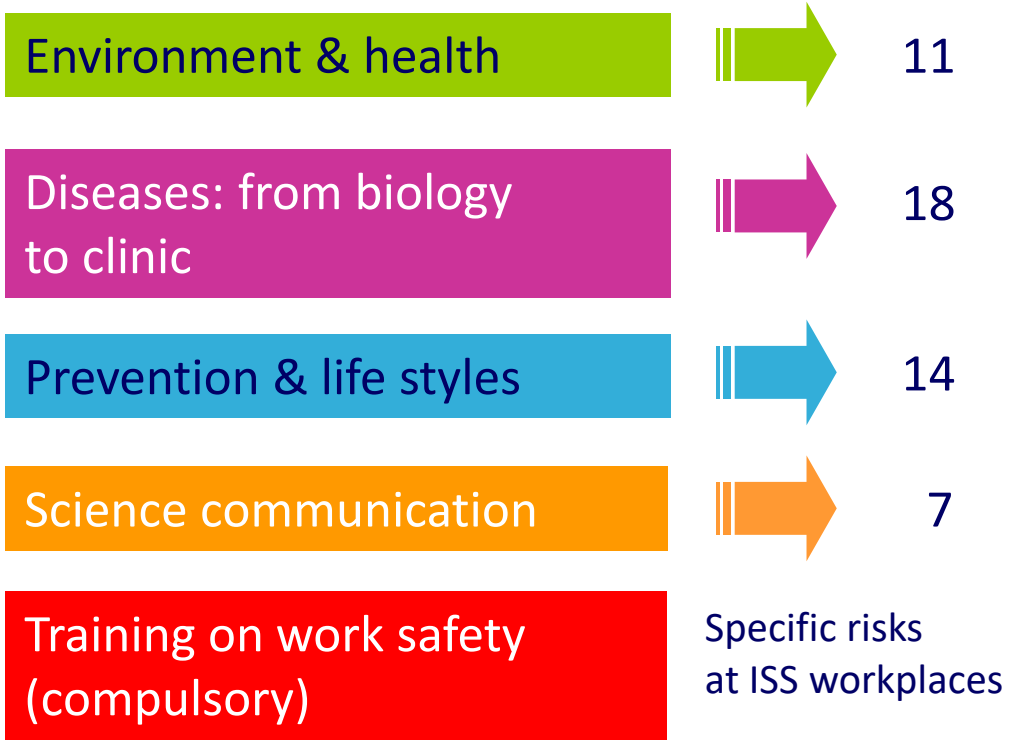
ISS: reference point for school-work alternating system

Active role to updating schools on:

- **health issues**
- **health-related placement opportunities and challenges**

ISS scientific paths in School-work WAS

4 areas and 50 paths:



AS9 · Controllo della qualità microbiologica e virologica delle acque

1 Introduzione ai criteri di valutazione dei requisiti di idoneità delle acque dal punto di vista microbiologico

Norme
sign *logici.*
dure e come

2 Applicazione di tecniche analitiche per il rilevamento quali/quantitativo di batteri e virus in campioni di acqua di diversa qualità

pretazione dei dati ottenuti,
dazione di eventuali punti critici e
possibili interventi correttivi

3 Esercit… microb… …ne delle acque

Valutazione della qualità delle acque
e relazione sui dati acquisiti

EXAMPLES OF THE TRAINING OFFER IN ITALIAN showing activities and expected results

Risultati del percorso

Acquisizione di competenze teorico-pratiche di base per la valutazione del rischio microbiologico e virologico nelle acque ed elaborazione di pieghevoli a carattere informativo.

iss alternanza scuola lavoro

ISTITUTO SUPERIORE DI SANITÀ

Alternanza Scuola Lavoro in ISS

Guida alla scelta dei percorsi

anno scolastico 2016-2017

percorso AS2

Alimenti e mangimi geneticamente modificati: valutazione della sicurezza d'uso

Teoria

Conoscere gli alimenti …ati, cosa sono, come si creano e quali so… …l loro uso e tutelano la sicurezza …

…ndo tecniche di biologia …one del DNA.

EXAMPLES OF GUIDES FOR SCHOOLS TO SELECT THE MOST APPROPRIATE PATH

percorso BC4

Dalla prolifera… …ulare: la ricerca nella …

Teoria

Conosciamo la distrofia m… …re: cosa sono le cellule muscolari satelliti, qual'e' il loro ruolo nel muscolo sano e quali sono le disfunzioni causate dalla malattia.

Pratica

Tecniche di biologia cellulare, molecolare e biochimica per lo studio delle differenze tra cellule sane e distrofiche.

24

percorso PS8

Vaccini e malattie prevenibili da vaccinazione

Teoria

Capire cosa sono i vaccini, i loro requisiti essenziali e i principali tipi di vaccini disponibili in commercio. Imparare i principali step necessari per il rilascio in commercio di un lotto di vaccino (qualità, sicurezza/innocuità, efficacia) dalla segnalazione di un caso di malattia infettiva (es. meningococco) alla caratterizzazione molecolare del ceppo responsabile.

Pratica

Uso della bioinformatica per il disegno di un vaccino e la caratterizzazione molecolare dei ceppi virali responsabili di malattie infettive.

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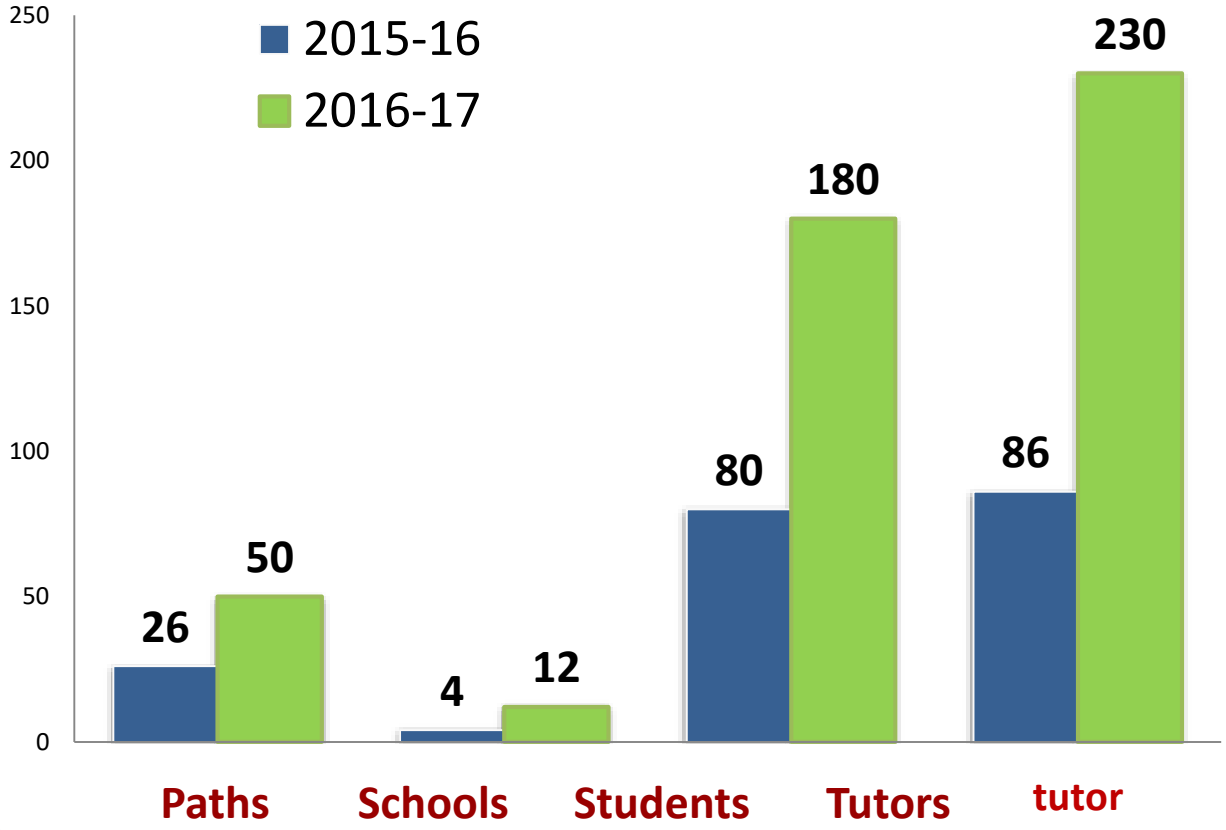
Figures of the ISS Alternating program

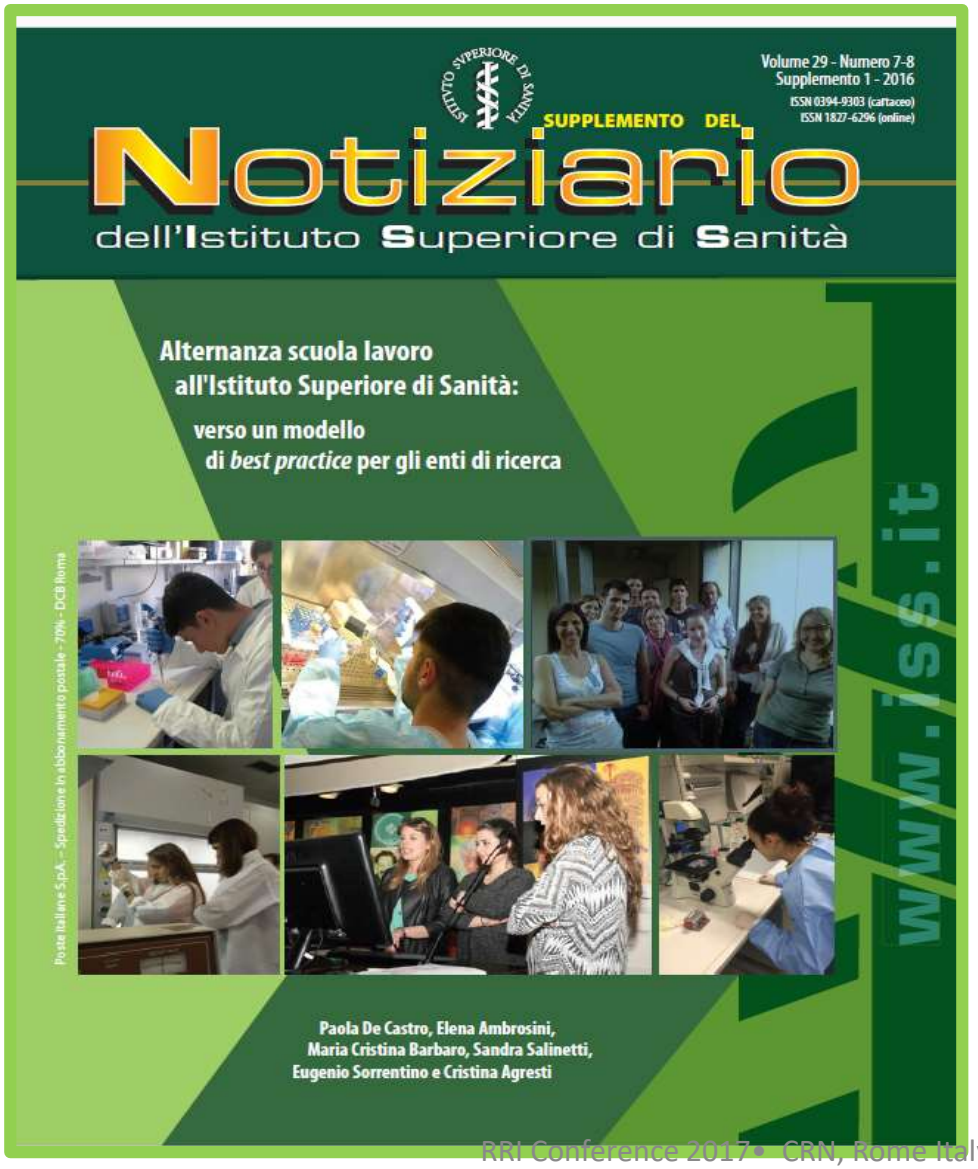


iss alternanza scuola lavoro

13.500 hours

35 schools in waiting list

ISS guidelines – 2016 (produced after the pilot stage)



How the system works

Recommended Organization

- **Stage 1.** Preparatory activity
- **Stage 2.** Implementation (50 hours)
- **Stage 3.** Evaluation and dissemination

best-practice for research institutes

Voices (Students, teachers, tutors)

Sample models

Each stage is described in detail

http://www.iss.it/binary/publ/cont/Alternanza_ISS__Best_practice__online.pdf

School-Work Alternating System. Model for the Research Institutes

STEP 1. PREPARATORY ACTIVITY

Establishment of a multidisciplinary coordination group

Relationship with schools
(researchers, teachers and students)

- Identification of student's educational needs
- Co-planning of training modules
- Definition of procedures on how to perform the training modules

Relationship with Institute's experts
(researchers and collaborators)

- Presentation of the SWA project to institute's researches
- Setting-up of training modules within thematic areas of interest for the school
- Appointement of referents, tutors and collaborators

Communication

- Production of guides, booklets, forms and posters
- Planning and implementation of an ad hoc web space
- Dissemination through national and international events and social media
- Activation of a collaborative network

Safety and Logistics

- Planning of training course on the specific risks of the Institute
- Definition of the space for the activities in accordance with the safety requirements

- Signing of the agreement beetwen schools and hosting Institution
- Presentation of the training modules
- Assignemnt of the students to the single modules
- Signing of the student's training project

STEP 2. IMPLEMENTATION OF THE TRAINING MODULES

FIRST DAY
(9.00-17.00) (8 hours)

- Welcome of students and teachers
- Presentation of the institution's activities.
- Training course on specific risks

Following days
(9.00-16.00) (7 hours)

- Activities in Laboratories, Centers and Services

LAST DAY
(9.00-16.00) (7 hours)

- Students' presentation in plenary session in front of teachers, tutors and students

STEP 3. FINAL EVALUTATION AND PLANNING OF FUTURE ACTIVITIES

Certification of students' new competences

Tutor Meeting to discuss results achieved and plan future activities

Development of new projects in collaboration with other research institutes

Students Involvement in conferences and dissemination events to present their school work alternting activities


RRI Conference 2017• CRN, Rome Italy • 25-26 September 2017

More in Italian….

Documents ASL ISS

http://www.iss.it/publ/index.php?lang=1&id=2984&tipo=15

Website realized by students

Global health path including tutors' presentations

www.globalhealthgroup.net/asl/

Videos realized by students

https://youtu.be/jDlJwwy1cBM

https://www.diregiovani.it/comunica/supera-te-stesso-guida-verso-il-futuro-ragazzi-in-alternanza-alliis/

FINAL CONSIDERATIONS

It is important to create **awareness** on the role of science literacy in society and **engage researchers** to commit in science communication addressing **different stakeholders**

This commitment will contribute to create a **more equitable world** where everybody can have access and properly use available information and services

THANK YOU!

paola.decastro@iss.it