

UNIMIB
A.A. 2024/2025 - 38° - 39° - 40°cycles of Doctoral courses
HANDS ON Responsible Research & Innovation _ RRI

Premise

Responsible Research and Innovation is the European breakthrough scientific Paradigm that aims at producing science and innovation in partnership with/responding to society. In fact, it is methodological framework, an approach that

- ◇ anticipates and assesses **potential implications, impact and societal expectations** with the aim to foster the **design of inclusive and sustainable research and innovation**,
- ◇ and implies that all the **societal actors** (researchers, citizens, policy makers, business, third sector organisations, etc.) **work together during the whole research and innovation process** to better align both the process and its outcomes with the values, needs and expectations of society.

Responsible innovation means taking care of the future through collective stewardship of science and innovation in the present. The four dimensions of responsible innovation are Anticipation, Reflexivity, Inclusion, Responsiveness

**RRI is about: including all actors,
and considering specific key issues and process dimensions**



Social justice & Inclusion

Avoid unfair exclusion of particular groups from either participation in research and/or access to benefits arising from research

Sustainability

Enable research programmes and RRI initiatives to contribute to sustainable growth according to EU 2020 strategy

tackling huge challenges such as the “Seven Grand Challenges” identified by the European Commission



It is crucial to frame and tailor the RRI approach according to the different research stages of

- ideation and development,
- implementation and management,
- finalization, impact assessment and sharing of results,

aiming at integrating it to the whole scientific process.

Our Proposal

Consistently, our proposal is to provide one day per year of "Hands on RRI" to accompany and support doctoral students from the first to the third year, during all phases of their research, including the final stages of impact assessment and sharing results.

For first-year doctoral students, the "Hands on RRI" interactive course on “(CO) DESIGNING RESPONSIBLE RESEARCH. INTEGRITY, ETHICS & REPRODUCIBILITY will

- have the same format for all Ph.D. students, although brought back to the specifics of disciplinary fields, and research project;
- engage **100 participants** for each edition;
- foresee 3 editions involving doctoral students from macro-multidisciplinary areas.

For the second-year doctoral students, the “Hands on RRI” interactive course on “**DEVELOPING RESPONSIBLE RESEARCH**” will have 2 formats:

- a common half a day format on “MONITORING RRI ACTIVITIES AND THEIR IMPACTS WITH INDICATORS FOR PROCESSES, INTERMEDIATE OUTCOMES AND PERCEPTIONS”
- a half-day seminar on **Open challenges for responsible research** that each doctoral student can choose from the following 3 options:
 - Participatory research, citizen science in practice**
 - Artificial Intelligence in research (for a good practice)**
 - Next-generation (integrated-digitalized data-omics based) research**

For the third-year doctoral students, the “Hands on RRI” interactive course on “**ASSESSING and SHARING RESPONSIBLE RESEARCH**”

- A half a day on-line seminar involving students from the 3 macro-multidisciplinary areas identified on
 - From data to results. Open Access and sharing**
 - Strategy and models to returning results to participants, communities and society, and sharing benefits**
- Autonomous self- RRI evaluation of the whole research process

1st PhD Year
(CO) DESIGNING RESPONSIBLE RESEARCH. INTEGRITY, ETHICS & REPRODUCIBILITY

The program

1st one-day cross-workshop October

6, 2025 - Sironi room (U4 - 8)

HUMAN & LIFE SCIENCES

Time	Main Session <i>(RRI dimensions & concepts)</i>	Contents	Trainers per edition
9:00 – 10:15 Interactive plenary (& POST-IT session)	The RRI shift.	<i>RRI concepts, dimensions & implications in Life Sciences domain</i>	S. Casati (CNR-BBMRI)
10:15– 11:30 Interactive plenary (& POST-IT session)	Ethics Self-assessment & third part reviewing <i>(RRI – Dimension: Anticipation & reflection – RRI – Pillars: Ethics, Public Engagement, Social Inclusion)</i>	Ethical-Legal-Social – ELSI practical session on - <i>Research ethics evaluation (identification of serious & complex ethical issues, risk/impact assessment, mitigation, oversight governance)</i> - <i>Submitting the study to a University/Institutional Ethics Committee – and/or to an Access Committee (Why, When, Who, What and How)</i> - <i>Ethics check within Horizon Europe</i> <i>Considering the different scientific domains, the participants will self-assess their research within an ELSI European horizon and/or hands on the Unimib Ethics committee matrix to submit a request of ethics reviewing and/or on a Biobank/Registry access procedure to submit an access request</i>	S. Casati (CNR-BBMRI)

11:30 – 11.45 Break			
11:45– 13:15 Interactive plenary & practical session – working groups 13:15 – 13:30 Output sharing	Research Integrity <i>(RRI - Anticipation & reflection - Ethics)</i>	<i>The Status of Researcher</i>	V. Colcelli (CNR – IFAC)
13:30 – 14:30 Lunch Break			
14:30 – 16:30 Interactive plenary 16:30 – 17:40 Practical session –working groups on study preregistration 17:40 -18:00 Outputs sharing and take- home message	Reproducibility & FAIRfication <i>(RRI Dimension- Openness & transparency – RRI Pillars: Open Access, Governance, Sustainability)</i>	<i>(Co) design & track your study, methods, and scientific tools</i> - <i>Research preregistration and Registered Reports, and workflow infrastructure in an Open Science Environment</i> - <i>Abc for a Data Management Plan, Metadata and FAIRification</i> <i>Practical Hands-on session on Preregistration and Research Data Management Plan. This module will be a practical training on drafting a Preregistration and a Research Data Management Plan, building on what has been learned in the previous modules.</i>	M. Zambelli (Università Cattolica di Milano), (C. Zogmaister) D. Scisci, C. Pisano (UNIMIB)

**2nd one-day cross-workshop October
7, 2025 - Sironi room (U4 - 8)**

ECONOMIC, LEGAL, SOCIAL SCIENCES

Time	Main Session <i>(RRI dimensions & concepts)</i>	Contents	Trainers per edition
9:00 – 10:15 Interactive plenary (& POST-IT session)	The RRI shift.	<i>RRI concepts, dimensions & implications in Human Sciences domain</i>	S. Casati (CNR-BBMRI)
10:15 – 11:30 Interactive plenary (& POST-IT session)	Research Integrity <i>(RRI - Anticipation & reflection - Ethics)</i>	<i>The Status of Researcher</i>	V. Colcelli (CNR)
11:30 – 11.45 Break			
11:45– 13:15 Interactive plenary & practical session – working groups 13:15 – 13:30 Output sharing	Ethics Self-assessment & third part reviewing <i>(RRI – Dimension: Anticipation & reflection – RRI – Pillars: Ethics, Public Engagement, Social Inclusion)</i>	Ethical-Legal-Social - ELSI practical session on - <i>Ethics check within Horizon Europe</i> - <i>Research ethics evaluation (identification of serious & complex ethical issues, risk/impact assessment, mitigation, oversight governance)</i> - <i>Submitting the study to a University/Institutional Ethics Committee – and/or to an Access Committee (Why, When, Who, What and How)</i> <i>Considering the different scientific domains, the participants will self-assess their research within an ELSI horizon or hands on the Ethics committee matrix to submit a request of ethics reviewing.</i>	S. Casati (CNR-BBMRI)

13:30 – 14:30 Lunch Break			
14:30 – 16:30 Interactive plenary 16:30 – 17:40 Practical session – working groups on study preregistration and Data Management Plan 17:40 -18:00 Outputs sharing and take-home message	Reproducibility & FAIRfication <i>(RRI Dimension- Openness & transparency – RRI Pillars: Open Access, Governance, Sustainability)</i>	<i>(Co) design and track your study and your scientific tools</i> - <i>Research preregistration and Registered Reports, and workflow infrastructure in an Open Science Environment</i> - <i>Abc for a Data Management Plan, Metadata and FAIRification</i> <i>Practical Hands-on session on Preregistration and Research Data Management Plan. This module will be a practical training on drafting a Preregistration and a Research Data Management Plan, building on what has been learned in the previous modules.</i>	M. Zambelli (Università Cattolica di Milano), (C. Zogmaister), D. Scisci, C. Pisano (UNIMIB)

**3rd one-day cross-workshop October 9,
2025 - Sironi room (U4 - 8)**

STEM – Earth sciences

Time	Main Session <i>(RRI dimensions & concepts)</i>	Contents	Trainers per edition
9:00 – 10:00 Interactive plenary (& POST-IT session)	The RRI shift.	<i>RRI concepts, dimensions & implications in STEM, Earth sciences domain</i>	S. Casati (CNR-BBMRI)
10:00 – 11:30 Interactive plenary (& POST-IT session)	Research Integrity <i>(RRI - Anticipation & reflection - Ethics)</i>	<i>Good practices and experiences</i> - <i>In research design and planning</i> - <i>In the interactions with all the actors at stake</i>	E. Lazzeri (CNR)
11:30 – 11.45 Break			
11:45– 13:30 Interactive plenary (& POST-IT session)	Ethics Self-assessment & third part reviewing <i>(RRI – Dimension: Anticipation & reflection – RRI – Pillars: Ethics, Public Engagement, Social Inclusion)</i>	Ethical-Legal-Social - ELSI <i>practical session on</i> - <i>Project based on Citizen science</i> - <i>Ethics check within Horizon Europe</i> - <i>Research ethics evaluation (identification of serious & complex issues with a special regard to new technologies, risk/impact assessment, mitigation, oversight governance)</i> <i>Considering the different scientific domains, the participants will self-assess their research within an ELSI horizon or draft citizen science rationale</i>	S. Casati (CNR - BBMRI)
13:30 – 14:30 Lunch Break			

14:30 – 16:30 Interactive plenary 16:30 – 17:40 Practical session – working groups on study preregistration and Data Management Plan 17:40 -18:00 Outputs sharing and take-home message	Reproducibility & FAIRfication <i>(RRI Dimension- Openness & transparency – RRI Pillars: Open Access, Governance, Sustainability)</i>	<i>(Co) design and track your study and your scientific tools</i> - <i>Research preregistration and Registered Reports, and workflow infrastructure in an Open Science Environment</i> - <i>Abc for a Data Management Plan, Metadata and FAIRification</i> <i>Practical Hands-on session on Preregistration and Research Data Management Plan. This module will be a practical training on drafting a Preregistration and a Research Data Management Plan, building on what has been learned in the previous modules.</i>	E.Lazzeri (CNR)
--	---	--	-------------------------------

2nd PhD Year
DEVELOPING RESPONSIBLE RESEARCH.

The program

**1st half-a-day cross-workshop October
10, 2025 - Sironi room (U4 - 8)**

HUMAN & LIFE SCIENCES

MONITORING RRI ACTIVITIES AND THEIR IMPACTS WITH INDICATORS FOR PROCESSES, INTERMEDIATE OUTCOMES AND PERCEPTIONS			
Time	Main Session <i>(RRI dimensions & concepts)</i>	Contents	Trainers per edition
9:00 – 10:15 Interactive plenary (& POST-IT session)	The RRI indicators <i>Process and perception indicators for the 8 RRI dimensions (from multi-actor engagement to open access)</i>		S. Casati (CNR-BBMRI)
10:15– 11:30 Interactive plenary (& POST-IT session)	<i>FAIRfication and sample-data characterization and digitalization</i>		M. Pallocca (CNR IEOMI BBMRI)
11:30 – 11.45 Break			
11:45– 12:45 Practical session –working groups 12:45 – 13:00 Output sharing	Hands on on-going PhD projects to assess and (eventually) revise the research process within a RRI indicators framework.		S. Casati & M. Pallocca

2nd half-a-day cross-workshop
October 31, 2025 - Aula Martini U6-4

ECONOMIC, LEGAL, SOCIAL SCIENCES

MONITORING RRI ACTIVITIES AND THEIR IMPACTS WITH INDICATORS FOR PROCESSES, INTERMEDIATE OUTCOMES AND PERCEPTIONS		
Time	Main Session	Trainers per edition
9:00 – 10:15 Interactive plenary (& POST-IT session)	The RRI indicators <i>Process and perception indicators for the 8 RRI dimensions (from governance to open access)</i>	S. Casati (CNR-BBMRI)
10:15– 11:30 Interactive plenary (& POST-IT session)	FAIRfication: How to assess the process.	D. Scisci (UNIMIB) /C. Pisano
11:30 – 11.45 Break		
11:45– 12:45 Practical session –working groups 12:45 – 13:00 Output sharing	Hands on on-going PhD projects to assess and (eventually) revise the research process within a RRI indicators framework.	S. Casati, D. Scisci

3rd half- day online cross-workshop
November 10, 2025 - Aula Martini U6-4

STEM – Earth Sciences

MONITORING RRI ACTIVITIES AND THEIR IMPACTS WITH INDICATORS FOR PROCESSES, INTERMEDIATE OUTCOMES AND PERCEPTIONS		
Time	Main Session	Trainers per edition
14:00 – 14:15 Interactive plenary (& POST-IT session)	The RRI indicators <i>Process and perception indicators for the 8 RRI dimensions (from governance to open access)</i>	S. Casati (CNR-BBMRI)
15:15– 16:30 Interactive plenary (& POST-IT session)	<i>FAIR play in research: potential and criticality of new technologies applied to data</i>	F. Frexia (CRS4)
16:30 – 16.45 Break		
16:45– 17:45 Practical session –working groups 17:45 – 18:00 Output sharing	Hands on on-going PhD projects to assess and (eventually) revise the research process within a RRI indicators framework.	S. Casati & F. Frexia

Open challenges for responsible research

a half-day seminar that each doctoral student can choose from the following 3 options:

1st half-day seminar November 7, 2025, 14:00 - 17:00

Participatory research, citizen science in practice

Pesaro E (BBMRI ERIC Stakeholder Forum). Participatory Organism and Research infrastructures: the Patient and Citizen Pillar of BBMRI ERIC

Frattini P (UNIMIB) Citizen science & hydrogeological risk management: a living laboratory with the young generation

Vito D (San Diego City University) Marine debris glow estimation through citizen science approaches: case studies from Mediterranean coastal tourist sites

2nd half-day seminar November 27, 2025, 10:00 - 13:00

Next-generation (integrated-digitalised data-omics based) research

Laura Milita (CNR) European Regulations, data governance and renewed accountability

Casati S (CNR-BBMRI) Translational research and biobanking of next generation. A shift for ethical reviewing, consenting/assenting to governance, as well as oversight governance processes within a Responsible Research and Innovation framework

Antonella Mirabile (CNR-IEOS), Research, digitalisation and citizen rights'

3rd half day seminar November 21, 2025, 10:00 – 13:00

Artificial Intelligence in research (for a good & responsible practice)

Colcelli V (CNR -IFAC) The legal and ethical requirements for AI application in science

Milita L (CNR – to be confirmed) Artificial Intelligence and Scientific Research. What Governance for New Technologies in the Development of Scientific Research.

Mellone S (UNIBO) AI for predictive, personalized, preventive, and participatory medicine

3°PhD Year
ASSESSING and SHARING RESPONSIBLE RESEARCH

Common online program

- From data to results. Open Access and sharing
- Strategy and models to returning results to participants, communities and society, and sharing benefits
- Sharing tools and rationale for an autonomous self- RRI evaluation of the whole research process

Different focus – domains

October 29, 2025 – 10:00 to 13:30: Human & Life Sciences (Sara Casati, Matteo Macilotti UNITN, Manuel Ottaviano AUSL di Bologna, Eva Pesaro - Ass. Pazienti con Sindrome di Poland to be confirmed)

October 17, 2025 – 10:00 to 13:30: Economic, Legal, Social Sciences (Sara Casati, D. Scisci)

October 30, 2025 – 10:00 to 13:30: STEM - Earth Sciences (Sara Casati, Luca Pireddu, CRS4 - to be confirmed, Roberto Pini, CNR to be confirmed)

Scientific Responsible: Dr S. Casati, sara.casati@unimib.it