Higher Education Institutions & Responsible Research and Innovation
HEIRRI project: Creating training programs for responsible research and innovation

Ana Marušić, Ivan Buljan, Mario Malički, HEIRRI Consortium
European Commission: „Responsible research and innovation is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation.”
The European Commission has identified **six key axes of RRI**: public engagement, science ethics, science education, gender equality, open access, and science governance.

**Four domains of RRI:**
- Diversity and inclusion
- Anticipation and reflection
- Openness and transparency
- Responsiveness and adaptive change
HEIRRI is a Horizon2020 project that aims to integrate the concept of Responsible Research and Innovation (RRI) at all stages of education of scientists and engineers, as well as other fields or professions working on or affected by R&I.

A Higher Education Institution, HEI, is a formal learning organism that is accessible after the secondary education: universities, academies, colleges, seminaries, and institutes of technology.
HEIRRI results so far

State of the art review of RRI and RRI learning

RRI Database – 23 exemplary cases related to RRI and RRI learning in higher education institutions (EU projects, different teaching/pedagogical approaches, programmes and courses and a policy document and a report)

HEIRRI training programmes
HEIRRI training programme syllabus

• Title
• Cycle
• Year of study
• ECTS credits
• Learning outcomes
• Mode of delivery
• Prerequisites and co-requisites

• Course content
• Recommended or required reading and other learning resources/tools
• Planned learning activities and teaching methods
• Assessment methods and criteria

HEIRRI project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 666004
Studying Responsibility: A Module-Based Integration of RRI into Bachelor’s Programmes

**ECTS: 4×0.5**

**Audience:** Undergraduate students

**Design:** 4 modules, implemented together or included in already existing courses. Students (1) learn what research, innovation, and RRI mean in their field of study, (2) deal with concrete cases of RRI, (3) get to know practical approaches to promote RRI, and 4) to reflect on the responsibility of R&I in their scientific field.
Doing and Experiencing Dialogical Reflection on Research and Innovation

**ECTS: 3.0**

**Audience:** Masters students

**Design:** Interactive course – students get to know and discuss different approaches of how to facilitate dialogues on issues of R&I. Then they have to develop dialogue activities in groups and implement these in “dialogue experiments” with their colleagues as participants.
Enhance your Thesis

ECTS: 2.0

Audience: Masters students

Design: Course for master’s students starting their final thesis – participants get to know concepts of RRI and discuss case examples, and then identify, investigate, and reflect on RRI aspects of their own theses.
Responsible PhD: RRI and PhD Research Projects

ECTS: 1.0

Audience: PhD students

Design: Course – introduces PhD students to the concept and idea of RRI, discuss its role in (academic) research by case examples, and further shows how PhD students can apply RRI in their own research.
Supporting RRI: Developing RRI Guidelines for PhD Candidates

**Audience:** PhD students

**Design:** Five- to six-hours workshop for PhD candidates – students develop RRI guidelines specific for the position of a PhD researcher. They identify their own possibilities to promote change towards more responsible research within their research context, and then set up guidelines that consider different concepts of RRI.

ECTS: 1.0
Teaching Responsible Research and Innovation in Higher Education

**Audience:** Academic and non-academic HEI members

**Design:** Train-the-trainer online course based on participants’ independent study of provided texts, video material, and literature in combination with writing assignments and discussions in an online forum and chat. Participants deal in three parts with (1) concepts and the relevance of RRI, (2) practical approaches towards RRI, and (3) teaching RRI in higher education.
Facilitating Reflection on Responsible Research and Innovation

**Audience:** Academic and non-academic HEI members

**Design:** Train-the-trainer one-day workshop – participants will experience a reflection exercise on issues of Responsible Research and Innovation and related aspects. They will learn how to initiate and facilitate such reflection in their own field and particularly in teaching.
Considering Responsible Research and Innovation by Design

**Audience:** Master’s and PhD students, R&I actors and other stakeholders

**Design:** Interactive five-day summer school brings together participants with different scientific and professional background to get to know RRI and work on concrete research proposals that consider RRI in organising a research process.

ECTS: 2.0
Concepts and Practice of Responsible Research and Innovation

**ECTS: 2.0**

**Audience:** Students, researchers, HEI actors, stakeholders, and other interested actors

**Design:** Massive open online course (MOOC) directed at a broader audience, from students and other stakeholders and actors of HEIs (e.g. researcher, librarians, administrative staff) to other interested people. Provides an overview of existing concepts and practices of responsible and sustainable research and development.
- Description of the higher education institution
- Institution’s interest in RRI (and information on previous experiences, if any)
- People that will be involved in the testing
- Training material(s) they would like to test (and why)
- Future plans to integrate RRI into the teaching of the institution
Testing training programmes

• Level 1 outcomes – learners’ reaction to the intervention
• Level 2 outcomes – changes in attitudes and knowledge
• Level 3 outcomes – behavioural change transferred from the learning environment to the workplace (behavioural intentions; actual change in practices)
• Level 4 outcomes – organizational changes attributable to the intervention.
Thank you for your attention!

ana.marusic@mefst.hr