

# **Training Programs Design (WP3)**

**D3.1 Training Programs Design Guide of  
Work**



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## Abbreviations

DOA	Description of Action
ECTS	European Credit Transfer System
HEI	higher education institution
ILDE	Integrated Learning Design Environment
MOOC	Massive Open Online Courses
OA	Open Access
R&D&I	research, development, and innovation
R&I	research and innovation
RRi	Responsible Research and Innovation
WP	work package





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# **Deliverable 3.1**

# **Training Program Design**

# **Guide of Work**



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## 0. About HEIRRI

Responsible Research and Innovation (RRI) is a transformative emerging principle of research and innovation policy. The RRI concept emerges from scholarly research that is critical of the status quo of the science-society interface. The aim of the HEIRRI project (Higher Education Institutions and Responsible Research and Innovation) is to start the integration of RRI within the formal and informal education of future scientists, engineers, and other professionals involved in the research, development, and innovation (R&D&I) process.

HEIRRI mainly works around the six RRI “key aspects” identified by the European Commission (societal/public engagement, gender equality, open access, science education, ethics, and governance in research and innovation (R&I)), but above all those six “keys”, HEIRRI wants to stress the potential of RRI as a transformative, critical, and radical concept.

HEIRRI will create and share a stock-taking inventory constituted by a State of the Art Review and a Data Base on a open access (OA) basis. The inventory will gather results of other EU funded RRI projects, good cases, and practices of RRI and RRI learning. Also, different stakeholders involved and/or affected by R&I will participate in a debate and reflection process on RRI learning through online and offline Forum actions.

Results from the inventory will represent the basis for RRI Training programs and formative materials, offering students knowledge and skills to develop viable solutions to specific problems related to R&I, integrating theory and practice. They will be designed for different HEI educational levels (undergraduate, Master and PhD, summer courses, and Massive Open Online Courses (MOOC)), mainly based on Problem Based Learning methodology, and supported by multimedia materials (videos and microvideos, 2.0 materials, etc.). All results and products elaborated by HEIRRI will be uploaded OA at the RRI Tools platform<sup>1</sup>.

An internationalisation plan will guarantee their spreading awareness and future use by HEIs from Europe and beyond. A global scope and expertise on RRI will be provided by the HEIRRI consortium consisting of five European HEIs (Universitat Pompeu Fabra (UPF), Universitetet i Bergen (UiB), Aarhus Universitet (AU), Institut fuer Hoehere Studien und Wissenschaftliche Forschung (IHS), Sveuciliste u Splitu Univesity of Split (UNIST)), the European network of science centres and museums (AEESTI/Ecsite), “la Caixa” Foundation (FBLC), a network of universities (Catalan Association of Public Universities, ACUP), and a private company specialised in R&I (Innovatec).

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<sup>1</sup> <https://www.rri-tools.eu>

## 1. About the Training Program Design Guide of Work

HEIRRI Deliverable 3.1 “Training Program Design Guide of Work” outlines and details the work plan for HEIRRI WP3 and its relation to other work packages of the HEIRRI project. The work plan is based on the HEIRRI description of action (DOA), on the first insights from HEIRRI WP2, i.e. the stock taking and inventorying of existing literature, studies on RRI teaching and learning, as well as on suggestions from HEIRRI consortium partners at the HEIRRI kick-off workshop in Barcelona in September 2015.

Furthermore, it is scheduled according to the requirements stated and explained in the Coordination and Management General Guide (CMGG, D9.1), Forum Guide of Work (FGW, D1.1), Communication and Dissemination Plan (CDP, D7.1), and the Internationalization Plan (IntP, D6.1).

First, the paper gives an overview of the main objectives of HEIRRI WP3, its output, procedural requirements, and sub-tasks, the Design of the Training Program (Task 3.1), and the Accreditation and Qualification System (Task 3.2). Furthermore, the relevance and links of these Tasks within the HEIRRI project are described.

Second, detailed work plans for the sub-tasks are elaborated. These work plans will not only include the aim of the tasks and specific instructions, but also critical issues and questions to reflect upon, which might lead to adaptations of the work plan during the implementation process.

Third, the organisation of work is described. This includes the assignment of responsibilities to the HEIRRI consortium partners, ways of interaction in the WP3 working group, and quality control issues. Furthermore, the collaboration with the three HEIRRI Advisory Boards and with other external stakeholders and experts is outlined.

Fourth, the time schedule for WP3 including internal (for data collection, implementation of workshops, online and offline meetings, working documents) and external deadlines (deliverables) are presented.





## 2. Main objectives and tasks of HEIRRI WP3

The goal of HEIRRI WP3 is to design a minimum of ten training programs on RRI which can be used in HEIs at different educational levels (Bachelor, Master, PhD) as well as in certain contexts (summer courses, MOOC). The aim of the HEIRRI training programs is to enable students to integrate RRI in their (prospective) professional practice regarding R&I. The training programs equip students and other participants with knowledge about the theory, relevance and implementation of RRI, skills necessary to reflect upon RRI and to translate what they have learned into their own work in different R&I fields.

In general, a training program can be defined as a set of activities that aim at teaching knowledge and developing skills and abilities of a certain group of participants. In the context of HEIs, training programs are most likely **lectures, seminars, and workshops**. However, there might also be other possibilities to facilitate training on the topic of RRI, e.g. by **public events or exhibitions** within a HEI or by making it a **crosscutting issue in the curriculum**. One central issue of WP3 is to identify these various design possibilities, their features, their advantages and disadvantages in certain contexts, as well as their embedding into HEI contexts. Furthermore, WP3 will investigate the concrete organisation and structure of the training programs, including their necessary requirements, adequate condition, specific target groups, and objectives.

WP3 is divided into two main tasks corresponding to its main objectives:

**Task 3.1 Design of Training Programs** develops RRI training programs for different educational levels at HEIs. It is carried out from February 2016 to February 2017. The co-constructive development process takes into account academic knowledge and stakeholder recommendations. This will be achieved through

- the use of WP2 findings, identifying and analysing best practices and empirical evidence on RRI teaching and learning;
- the inclusion of different HEI actors into the development of RRI training programs in a series of stakeholder workshops in Vienna, Austria;
- an international consolidation phase, in which the draft training programs are discussed and adapted in various national contexts and HEIs;
- a continuous exchange and communication with the HEIRRI consortium partners and the Advisory Boards.

These steps are further elaborated on in chapter 3.

**Task 3.2 Accreditation and Qualification System:** Since the training programs are going to be used by HEIs within (and maybe beyond) Europe, it is important that they are compatible to the formal requirements of HEI curricula as defined by the European Credit Transfer System (ECTS) or other accreditation systems and quality standards. The training programs have to provide documentation,







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describe learning outcomes and objectives, and calculate the estimated work effort by students and other participants. Task 3.2 will formally adapt the training programs accordingly. It runs parallel to Task 3.1 from February 2016 to February 2017 and is coordinated and implemented by the Institute for Advanced Studies (IHS) and the Catalan Association of Public Universities (ACUP). This task will promote the uptake in curricula of different HEIs. It is further elaborated in chapter 4.



### 3. Work plan for Task 3.1: Design of Training Programs

HEIRRI WP3 Task 3.1 designs RRI training programs through a variety of collaborative efforts. The IHS will coordinate the joint efforts of the HEIRRI consortium members, the HEIRRI Advisory Boards, and the external experts and stakeholders. The main output of Task 3.1 (and WP3 in general) will be a minimum of ten RRI training programs of various types (lectures, seminars, workshops, MOOC) covering different educational levels (Bachelor, Master, PhD).

Certain types and formats of training programs will be more suitable for certain educational levels, institutional contexts, and purposes than others; there might be no gold standard or one-size-fits-all approach to RRI teaching and learning. Consequently, one key objective of HEIRRI Task 3.1 is to identify and analyse adequate ways of teaching and learning RRI for different teaching and learning environments. Most probably, the developed RRI training programs will include smaller modules to be integrated in existing courses within HEI curricula, e.g. on academic conduct or research ethics, as well as standalone lectures, seminars, and workshops.

Regarding teaching and learning environments, several preliminary key issues for the design of the RRI training programs will be identified and roughly conceptualised in the following section. However, these are only starting points for the WP3 co-construction process which will activate a variety of stakeholder regarding RRI teaching and learning in the context of HEIs; the procedural design will be outlined in section 3.2. Within the co-construction process, (1) existing best practices and experiences with RRI teaching and learning will be identified by adapting findings from HEIRRI WP2, (2) draft training programs will be developed together with stakeholders.

The co-construction process will start with a series of stakeholder workshops in Vienna, involving key actors from various universities and universities of applied sciences, which will result in several draft training program designs. These drafts will then be circulated within the HEIRRI consortium, and HEIRRI partners will be asked to discuss them with key actors in their own national and institutional contexts.

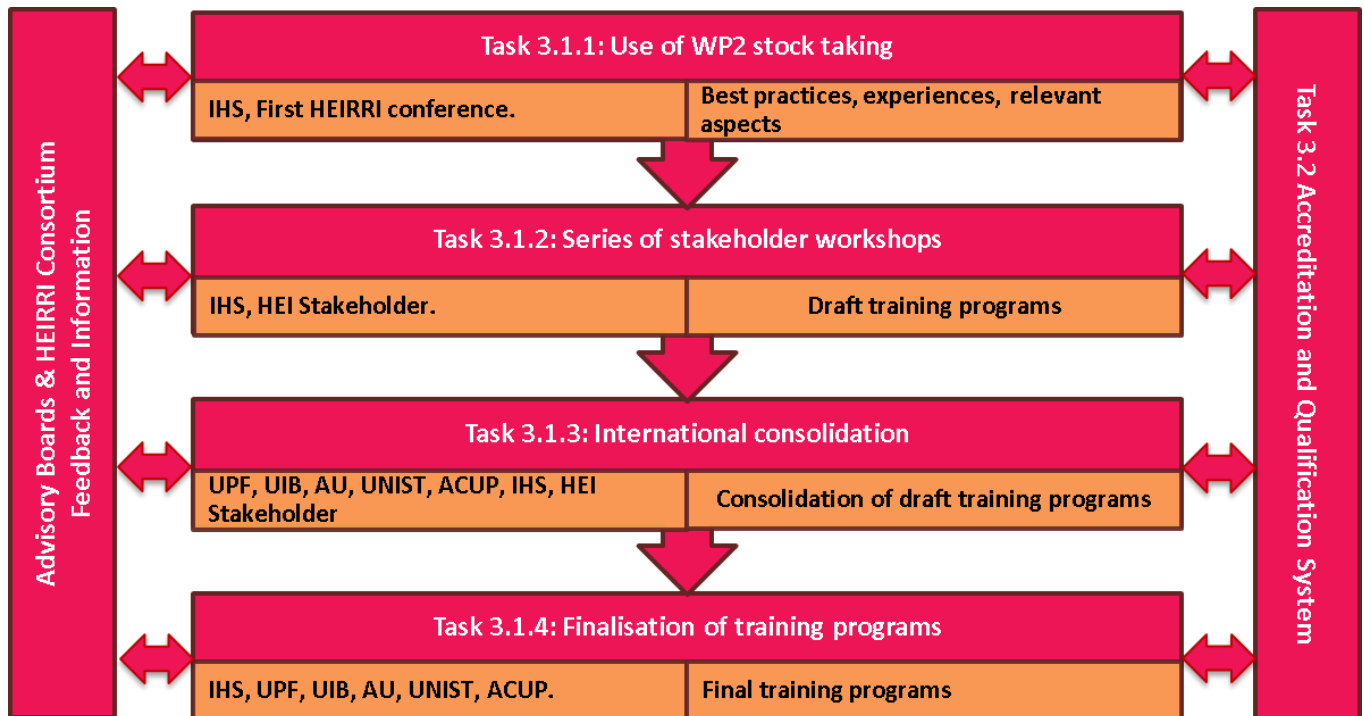
In addition to the empirical bottom-up approach, close consideration of the content of the RRI training programs is crucial: the structure and design of the training programs have to be adjusted to the content and training materials that are going to be taught and discussed – which will be elaborated on in WP4 – and vice versa. Different training settings, e. g. a lecture vis-à-vis a seminar, demand different types of input and material. Certain information and knowledge might be better conveyed within specific types of courses than in others. The alignment of the training programs designs and the training materials will be achieved by continuous communication and interaction with the coordinator (UPF) and the other consortium members working within WP4.

A quick overview of WP3 Tasks and Subtasks is given in Figure 1; details on each subtask – including aim, time, input, methods, output, and responsibilities – are given later on in the respective sections. A



detailed flow chart can be found in the Appendix (Figure 2).

Figure 1 WP3 Tasks



### 3.1 Key issues

HEIs can be perceived as complex organisations characterised by structures and institutional cultures, embedded in different national and international socio-historic contexts and scientific fields, equipped with certain resources, confronted with requirements from various stakeholders, and bringing together a multitude of societal actors and actor groups with different interests and aspirations. It is important to consider this complexity to increase the chance that the HEIRRI training programs for RRI are adopted, integrated in existing higher education curricula, and that they bring forth positive learning outcomes and in the end have a beneficial impact on R&I processes.

The development process has to ensure that, in the end, the training programs are designed in a way that they are compatible (and adaptable) to different HEI contexts regarding their available financial and personal resources, the structure and content of existing curricula, and address the topic of RRI in a way that is adequate for the respective target group. However, while it is to some extent necessary to be realistic about and pragmatic regarding the available (financial) resources, the needs of teachers and those of participants, it is essential not to entirely submit under financial and personal requirements, and not to reduce the idea of RRI education to mere direct instruction classes and teaching-to-the-test at the same time. Since RRI should not be diminished to a simple and probably futile tick box exercise, neither should RRI teaching purely aim at presenting aspects and examples of

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RRI, and memorising and reproducing them in standardised multiple-choice tests. HEIRRI takes account of this principle by taking up and focusing on student-centered learning methods, such as problem based learning (PBL).

In the following sections, requirements are categorised according to the entity or actor group that imposes them; these can be the HEIs, the teaching staff, or the target learning group. Furthermore, some requirements for the RRI training programs arise from the concept and principles of RRI themselves; these should also be considered in the development process. The identification of all of these different requirements is a first effort that should provide starting points to the empirical investigation and the co-construction process, but should not determine them. As explained later, there will be room for discussing these issues, but also to extend and shift the focus, and to deepen and modify it according to the first-hand-experience of HEI stakeholders.

### 3.1.1 Institutional requirements

One essential aspect to consider when designing RRI training programs to be implemented within HEIs is the institutional context and the requirements that it imposes on such training programs. Only if the training programs deal with the structures and aims, the capabilities and limitations of HEIs and different degree courses they will be (successfully) implemented.

Different HEIs have different resources at their disposal in order to implement RRI courses into their curricula. They differ for example in terms of financial means, personal resources, and space in relation to the number of enrolled and active students. While some universities and some countries have (relatively) free access to higher education and low tuition fees, others have more strict barriers to entry and high tuition fees; some receive high public funding, others less. These circumstances have an impact on the instructor-student ratio and the overall quality of teaching, learning, and individual supervision. Thus, for some HEIs small group workshops that require much time and intense supervision might not be a viable way for example, and, consequently, RRI training programs designed in this format might not be uptaken, but other formats instead, such as cross-curriculum integration of RRI aspects or lectures.

HEIs that want to promote RRI and thus are keen to integrate HEIRRI training programs into their curriculum might already have certain strategies (Corporate Social Responsibility, Sustainability, Good Conduct of Research, etc.), courses, and/or activities that deal with certain aspects of RRI. For these organisations, RRI training programs that make reasonable use of existing RRI activities – although they might not be called this way – could be interesting.

### 3.1.2 Requirements of teaching staff

Closely related to the above described issues of institutional requirements is the question about the needs and requirements of the teaching staff, respectively the trainers that have to conduct the HEIRRI



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training programs. Central in this regard is the knowledge and skills to educated students about RRI in certain ways or if there are already certain actors that try to promote (aspects of) RRI through courses or other activities. If not or if the experiences and knowledge are limited, train-the-trainer programs might also be sustainable ways of promoting RRI education. Furthermore, the existing (or limited) capabilities of teaching staff has an effect on the thematical scope and depth that the training programs materials and accompanying instructional manuals have to offer.

### 3.1.3 Requirements of target learning groups

The HEIRRI training programs have several target learning groups including Bachelor, Master, and PhD students (undergraduate/graduate courses) but also other groups such as practitioners from R&I or other related fields (MOOC, summer schools). It is important to assess and consider what students on different levels might already know about research and innovation practice or if they have conducted research themselves, if they have some basic knowledge on RRI or related concepts, what types of courses are adequate for them, and what types they are interested in. A further question is how to make them interested in courses on RRI and how to incentivise their participation.

Apart from being on different educational levels, they also have different academic backgrounds (social sciences, biosciences, engineering, economics, etc.). The alignment to different scientific fields will be mainly done within WP4 through drafting the training content accordingly. However, this will probably also become an issue in the co-construction process in WP3. Emerging issues regarding certain disciplines and scientific fields will be discussed with the stakeholder group as well as with the whole consortium.

### 3.1.4 Requirements of the concept of RRI

Although the HEIRRI training programs will be developed in a co-construction process, the learning outcomes of the training programs are – to a certain degree – prefigured by the HEIRRI objective and its conceptualisation of RRI.

As a starting point, HEIRRI takes six key aspects of RRI as identified by the European Commission: public engagement, gender equality, open access, science education and scientific literacy, ethics, and governance. Thus, training programs have to be designed in a way to cover (at least some of) these dimensions in appropriate and – in the best case – holistic ways without sacrificing further aspects of RRI (for further aspects see for example EC 2015b).

Furthermore, existing research and normative approaches point to several procedural characteristics of RRI – e.g. the “reflexive, self-organised and collective nature of responsible research and innovation” (Kuhlmann et al. 2016: 10) –, which also have to be considered in drafting the programs. In the best case, the training program design mirrors some of such principles of RRI.



Closely connected to the design requirements emanating from the concept of RRI itself are the requirements for the RRI training material, the content to be used within the RRI training programs, which will be developed within WP4. From first-hand experience with discussing RRI with a broad variety of stakeholders, we know that it is of utmost importance that the concept of RRI, its relevance, dimensions, and basic principles are not only described in an abstract manner, but are illustrated by very specific examples and cases (Lang/Griessler 2015). The design of RRI training programs has to ensure that within the training programs, there is room to present and discuss or even come up with more concrete examples.

### 3.2 Co-construction process

The process of co-constructing the RRI training programs consists of four closely interrelated steps:

- Task 3.1.1 Use of WP2 stock taking
- Task 3.1.2 Series of stakeholder workshops
- Task 3.1.3 International consolidation
- Task 3.1.4 Finalisation of training programs

All tasks will be coordinated by the IHS, but each step will bring together different members of the HEIRRI project team, of the three Advisory Boards (AB), as well as other key stakeholders regarding RRI in higher education and HEIs as well as curricula design. Details on the organisation of work, including the allocated time per task and HEIRRI consortium partner as well as the mode of collaboration, are given in Chapter 5 of this report. The exact time schedule for WP3 is given in Chapter 6. The following outline gives more details on these steps.

#### 3.2.1 Task 3.1.1: Use of WP2 stock taking

Table 1 Task 3.1.1 Overview

<b>Aim</b>	Identification and systematisation of existing best practices, empirical evidence, relevant aspects and questions regarding RRI teaching and learning.
<b>Time</b>	April 2016–May 2016 (M8–M9).
<b>Input</b>	<ul style="list-style-type: none"> <li>• WP2 stock taking and review (D2.2, preliminary database, interview results).</li> <li>• 1<sup>st</sup> HEIRRI conference.</li> </ul>
<b>Methods</b>	Document analysis (articles, best-practice examples, conference papers and posters, etc.).
<b>Output</b>	Task 3.1.1 internal review report (RRI teaching and learning best practices, experiences, crucial aspects, and uncertainties).
<b>HEIRRI partners</b>	IHS (1 PM), Advisory Boards.
<b>External partners</b>	–

RRI teaching and learning is already happening in HEIs in various formats and covering different topics. The respective courses are probably not be labelled RRI, but might be be framed as courses or modules





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covering “research integrity”, “good conduct of research” or “citizen science”. However, they are promoting ideas and aspects of RRI and thereby also generated knowledge about efficient and expedient ways of teaching related principles and practices. Thus, HEIRRI is not starting from scratch, but can draw on years of experiences in various contexts.

HEIRRI WP3 will build upon the insights and results of the review on RRI teaching and learning literature done in WP2. These will be tangible as Deliverable 2.2 (due in month 8) and collected in the database within Task 2.2 (due in month 12). Already in month 8, the preliminary database will give a quick overview of the focus of the reviewed literature in terms of the six RRI key dimensions, the main approach (empirical, theoretical, case description, etc.), as well as the potential for HEIRRI, including the type of contribution to RRI teaching and learning (approaches to program or session design, teaching and learning methods, experiences from sessions, etc.) and the suitable level (Bachelor, Master, PhD). It will also provide abstracts and short reviews of the relevant content for each reviewed piece of literature. Thus, it will be possible to quickly identify and retrieve the most relevant pieces of literature, which then can be incorporated into the design process. Existing best practices and empirical evidence regarding RRI teaching and learning will be identified and introduced to the stakeholder workshops as a starting point for discussions and the co-construction of training programs.

Furthermore, the documentation, abstracts, and posters of the first HEIRRI conference, which took place on 18 March 2016, will be analysed in these regards.

Findings from Task 3.1.1 will be used as an input for the co-construction of draft training programs together with HEI stakeholders in Task 3.1.2. Prior to the workshops, the findings will be communicated to the project consortium and the HEIRRI Advisory Boards for comments.

Task 3.1.1 will be implemented by the IHS with support from AU, the coordinator of WP2.

### 3.2.2 Task 3.1.2: Series of stakeholder workshops

**Table 2 Task 3.1.2 Overview**

<b>Aim</b>	Development of ten draft RRI training programs together with key stakeholders in a series of four workshops. Identification of possibilities and limitations for RRI training programs in HEIs.
<b>Time</b>	May 2016–September 2016 (M9–M13).
<b>Input</b>	<ul style="list-style-type: none"> <li>• Task 3.1.1 internal review report.</li> <li>• Experiences and visions of HEI stakeholders.</li> </ul>
<b>Methods</b>	<ul style="list-style-type: none"> <li>• Four half-day co-construction stakeholder workshops with 15 participants occupying different positions in different HEIs (Vienna, Austria).</li> <li>• Presentation of preliminary findings on ILDE (Integrated Learning Design Environment) platform.</li> </ul>
<b>Output</b>	<ul style="list-style-type: none"> <li>• Ten draft programs for RRI in HEIs.</li> <li>• Four internal workshop summary reports.</li> </ul>





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<b>HEIRRI partners</b>	IHS (3,5 PM), Advisory Boards, HEIRRI consortium.
<b>External partners</b>	15 HEI stakeholders from Austrian universities, universities of applied science, public administration, and other relevant organisations.

At the core of HEIRRI WP3 co-construction process is a series of stakeholder workshops which will be conducted by and at the IHS in Vienna. Coordinated and briefed by the IHS, the participating stakeholders will work together to identify possibilities and limitations of RRI teaching and learning in different HEI contexts and at different educational levels and will co-produce draft RRI training programs that are adjusted to the resources and needs of HEIs, teaching staff, and students in different settings. The draft training programs will then be consolidated to other contexts (see Task 3.1.3).

Four half-day workshops will be conducted from May to October 2016. All workshops will bring together the same group of stakeholders in order to be able to work in-depth on issues related to RRI teaching and learning at HEIs.

The first step in organising the stakeholder workshops is the identification of key stakeholders that are able to provide insights into and first-hand experiences in RRI teaching and learning. These stakeholders will be identified through desk research, reconsideration of data and experiences from other RRI related projects, and existing professional contacts.

The group might include but is not limited to

- teaching staff,
- members of ethics committees or ethics unit,
- researchers at HEIs,
- study program directors and coordinators,
- members of students' unions or students' representations,
- staff from science centres and museums,
- researchers of RRI,
- and other actors working in positions at HEIs that have an interest in promoting RRI.

Stakeholders will be identified across various HEIs covering different scientific fields and areas of responsibility. Thus, it will be possible to draw on the experiences and insights of different types of actors from different institutional contexts. Consequently, the RRI training programs will be better adapted (or adaptable) to different HEIs.

Around 15 participants will take part in each workshop (see Table 3 List of stakeholders). In case some stakeholders are not able to participate in each workshop, they will be asked to give individual written down or oral feedback (email, short open interview) on the issues discussed in the respective workshop session. In case certain stakeholders do not have the time to participate in all workshops,



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additional qualitative interviews covering the topics addressed in the respective workshops might be conducted.

Several possible stakeholders have already been identified, and first contacts have been established. Conversations with relevant stakeholders have shown that there is a vital interest in RRI training programs and to become part of the development process and of the pilot experience phase (WP5). Since questions of ethics, gender, open access, etc. are becoming more and more important in university policy, evaluation processes, and funding programs, the education of future researchers and scientists regarding RRI is getting more attention too.

Ahead of the workshop series, the IHS will engage in bilateral conversations with all workshop participants in order to identify their expectations considering the workshops and to collect first ideas and relevant aspects regarding RRI teaching and learning in HEIs. The IHS will make short protocols of these conversations and use the gathered information as an input for the first workshop.

**Table 3 List of stakeholders (highlighted in green: commitment)**

ID	Function	Type of institution	R&I field
01	Head of Group; Dean	University	ICT
02	Scientific Training Coordinator	Joint PhD program of four research institutes	Biomedicine, Biochemistry, Biology, Genetics
03	Head of Ethics Platform	University	Life Sciences, Natural Sciences
04	Head of Ethics Steering group	University	Engineering, ICT
05	Teaching staff	tba	tba
06	Teaching staff	tba	tba
07	Researcher at HEI	tba	tba
08	Researcher at HEI	tba	tba
09	Member of Ethics Unit/Committee	tba	tba
10	Researcher of RRI	tba	tba
11	Researcher of RRI	tba	tba
12	Student program director/coordinator	tba	tba



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13	Student program director/coordinator	tba	tba
14	Member of students' union/representation; other interested student	tba	tba
15	Member of students' union/representation; other interested student	tba	tba

Each half-day workshop will consist of a short input session, followed by an alternation of moderated plenary discussions and small-group sessions. At the end of each workshop, the main aspects of discussions and results will be summarised by the IHS. The summaries will be provided to the stakeholders ahead of the following workshop and will serve as starting point for further discussion.

Topics and objectives of discussion differ from workshop to workshop:

- In the first workshop, it is crucial to establish a positive and constructive working atmosphere and to create a common understanding of RRI, the objectives of HEIRRI, and the stakeholder workshops. Then, concrete experiences with RRI teaching and learning will be presented by both the workshop participants and the HEIRRI team (WP2/Task 3.1.1 findings), and discussed.
- The second workshop will focus on the conditions of teaching and learning RRI in HEIs. Participants will be asked to identify and discuss possibilities and limitations, existing and necessary resources, needs and requirements for teaching and learning RRI in their HEI.
- The third and fourth workshop will focus on drafting and then refining concrete RRI training programs to be implemented in HEIs at different educational levels. Coordinated by the IHS, the workshop participants will be asked to form small working groups that focus on specific RRI training formats (for Bachelor, Master, PhD level, MOOC, summer schools). These will be presented, discussed and adapted in plenary sessions.

According to the overall succession in the series of workshops and the objective of the respective workshop, the type and content of the input will vary:

- In the first workshop, the topic of RRI in general and the aim and methods of the HEIRRI project in particular will be presented. Then the objective and design of the stakeholder workshops will be elaborated and the findings from WP2, processed in Task 3.1.1, will be brought into the workshop as a starting point for discussion and stimulus for workshop participants to identify and describe their experiences with RRI training in their own institutions.
- In all subsequent workshops, there will be a recap of the main aspects and results of the preceding workshops.
- In the last two workshops, the emphasis will be on concrete draft training program designs.

Data will be collected in two ways: First, the IHS will take minutes on-site. Second, at some points



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during the workshops, participants will be asked to systematise and to write down key aspects from the discussions or results from deliberation in smaller working groups. These texts and visualisations will be collected (photo protocol) and further analysed. The information will be edited as internal reports, which then will be circulated within the HEIRRI consortium, the Advisory Boards, and the stakeholder group in-between each workshop via email and the ILDE platform; feedback will be gathered, analysed, and considered in the following workshops (e.g. as aspects to be considered in discussions, open questions, etc.).

**Table 4 List of stakeholder workshops**

WS	Date	Topics and objectives	Input	Output
1	mid May	Introduction to RRI, HEIRRI, and the co-construction workshops within WP3. Collecting and discussing experiences with RRI teaching and learning in HEIs.	HEIRRI project information, WP3 objectives and methods, WP2/Task 3.1.1 findings.	Internal summary report on the perception and evaluation of RRI and HEIRRI as well as a collection of experiences with RRI in HEIs.
2	early June	Conditions of RRI in HEIs: Identifying and discussing possibilities, necessary and existing resources, limitations of, and needs, for RRI in HEIs.	Main aspects and findings of WS1.	Internal summary report on the conditions of RRI teaching and learning in HEIs.
3	late June	Drafting RRI training programs for HEIs (small working groups).	Main aspects and findings of preceding workshops.	Draft training programs.
4	early September	Drafting and refining RRI training programs for HEIs (small working groups).	Draft training programs.	Training programs for international consolidation.

The data collected in the stakeholder workshops, in combination with WP2 results, will form the basis for the development of draft RRI training programs. This step is also closely linked to Task 3.2, Accreditation and Qualification Systems. In order to be compatible to different higher education systems and institutions as well as to the European Credit Transfer System, the structure and description of the training programs have to follow certain rules. Within Task 3.2, a common template for the training programs will be produced, including all elements of a training program necessary to be adjustable to HEI curricula.



### 3.2.3 Task 3.1.3: International consolidation

Table 5 Task 3.1.3 Overview

<b>Aim</b>	Consolidating the HEIRRI draft training programs to different national contexts and various HEIs.
<b>Time</b>	September 2016–November 2016 (M13–M15).
<b>Input</b>	<ul style="list-style-type: none"> <li>• Task 3.1.2 draft training programs.</li> <li>• Task 3.1.2 four internal workshop summary reports.</li> </ul>
<b>Methods</b>	<ul style="list-style-type: none"> <li>• One-day stakeholder workshops.</li> <li>• Additional qualitative interviews.</li> <li>• ILDE platform.</li> </ul>
<b>Output</b>	Internal consolidation reports.
<b>HEIRRI partners</b>	UPF, UIB, UNIST (1,5 PM), AU (1 PM), IHS, ECS (0,5), Advisory Boards.
<b>External partners</b>	Relevant HEI stakeholders with different institutional and national backgrounds.

WP3 aims at developing RRI training programs suitable for different HEIs in different national contexts. Given the limitation of resources, the focus on the Austrian context is efficient to co-construct first draft training programs. However, due to the dissimilarities of national higher education systems in particular, and of cultures in general, it is of utmost importance to adapt and to make these drafts compatible to a variety of conditions. This will be done within Task 3.1.3, International consolidation.

UPF, UIB, AU, and UNIST each will organise and implement a one-day stakeholder workshop with about eight participants to discuss the draft training programs with HEI stakeholders from their own countries. In case certain key stakeholders identified by HEIRRI consortium partners are not able to attend to the workshop, additional interviews might be conducted.

Based on experiences and results from the stakeholder workshops, the IHS will draft a workshop manual comprising a set of procedural instructions (e.g. on recruitment criteria, chairing, etc.), input materials (introduction to HEIRRI/RRI, draft training programs), and discussion guidelines to be used by the involved HEIRRI partners. The guidelines will be concerned with substantial questions regarding the content and methods of the training programs, and issues considering the successful implementation of the training programs in different national contexts and HEIs. The workshop manual will be discussed with the HEIRRI consortium and the Advisory Board before its finalisation.

The involved HEIRRI consortium partners will have to take minutes at the workshops and systematise their findings considering the ten draft training programs in internal feedback reports. These will be collected by the IHS at the end of November 2016 (M15) and provide the basis for the finalisation of the HEIRRI training programs.

Further feedback on the draft training programs and input for their revision will be gathered via the



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Multi-stakeholder Forum (WP1 – coordinated by ECSITE) and through strategic actions with international networks (WP6 – coordinated by ACUP). WP3 will also make use of the Integrated Learning Design Environment (ILDE) platform managed by UPF and present the draft training programs there in order to give others the opportunity for commenting.

The international consolidation will also involve the HEIRRI Advisory Boards: they will receive the draft programs for comments. Advisory Board members will be asked to give feedback and participate in the (online) discussion, which will be coordinated by the IHS and other consortium partners chairing the other Advisory Boards.

#### 3.2.4 Task 3.1.4: Finalisation of training programs

**Table 6 Task 3.1.4 Overview**

<b>Aim</b>	Incorporation of international consolidation and finalisation of HEIRRI training programs.
<b>Time</b>	December 2016–February 2017 (M16–M18).
<b>Input</b>	<ul style="list-style-type: none"> <li>• Task 3.1.1 internal review report.</li> <li>• Task 3.1.2 draft training programs.</li> <li>• Task 3.1.2 four internal workshop summary reports.</li> <li>• Task 3.1.3 internal international consolidation reports.</li> <li>• Task 3.2 structure of trainings program guideline.</li> </ul>
<b>Methods</b>	Desk research (document analysis).
<b>Output</b>	D3.2 Training Programs.
<b>HEIRRI partners</b>	IHS (1 PM), UPF, UIB, UNIST, FBLC (0,5), ACUP (0,25), Advisory Boards.
<b>External partners</b>	–

In the last step of WP3 (Task 3.1.4), the draft training programs developed in Task 3.1.2 will be revised according to the feedback gathered from HEI stakeholders and the Advisory Boards in the international consolidation phase (Task 3.1.3), and considering further insights from other activities within WP2, WP3 and WP4. One focus will be on securing that the training programs are also formally aligned to the requirements of international accreditation and qualification systems. They have to provide all necessary information in clean cut documentation (see Task 3.2).

HEIRRI Deliverable D3.2 will comprise the ten final training programs and will be shared with the HEIRRI project consortium, the Advisory Boards, and the Forum Online before official publication. A preliminary version should be available in January 2017. Then, in February 2017, last revisions will be made based upon received comments and feedback.

FBLC will ensure that the final HEIRRI training programs fulfil the requirements of the RRI Tools platform and will then upload the final version to the RRI Tools database for broad dissemination.





## 4. Work plan for Task 3.2: Accreditation and Qualification System

The aim of Task 3.2 is to guarantee that the HEIRRI training programs meet high quality standards and have a clear and validated system of accreditation and qualification according to the European Credit Transfer System (ECTS) and similar international accreditation frameworks. This includes the provision of documentation for all training program components, modules, and courses regarding their type, learning outcomes and objectives, learning activities and teaching methods, assessment criteria and methods, course content, ECTS, etc.

Table 7 Task 3.2 Overview

<b>Aim</b>	Elaboration and definition of a common formal structure for the HEIRRI training programs that meets the requirements of European and international accreditation and qualification systems. Evaluation of draft and final programs regarding the accreditation and qualification system requirements.
<b>Time</b>	April 2016–February 2017 (M8–M18).
<b>Input</b>	<ul style="list-style-type: none"> <li>• Task 3.1.2 four internal workshop summary reports.</li> <li>• Task 3.1.3 internal international consolidation reports.</li> <li>• D3.2 Training Programs (draft).</li> <li>• (Experts in HEI curricula design).</li> </ul>
<b>Methods</b>	<ul style="list-style-type: none"> <li>• Literature research.</li> <li>• Stakeholder workshops (Task 3.1.2).</li> <li>• (Expert interviews).</li> </ul>
<b>Output</b>	D3.3 Accreditation and Qualification System Report.
<b>HEIRRI partners</b>	IHS (1 PM), ACUP (1 PM), Advisory Boards.
<b>External partners</b>	Accreditation and qualification system experts.

In a first step, it is necessary to identify quality criteria and formal requirements for such training programs. This will be done through a literature research and the analysis of documents relevant in this context, e.g. the ECTS Users' Guide (EC 2015a). Furthermore, practical experiences on the challenges of uptaking and adapting training programs to the curricula of HEIs will be gathered in the HEI stakeholder workshops (Task 3.1.2 and Task 3.1.3). These experience will also be considered in further drafting the formal structure and documentation of the HEIRRI training programs. If necessary, expert interviews will be conducted by the IHS.

In a second step, the draft structure of the training programs and documentation will be shared with the HEIRRI consortium and Advisory Boards, they will be discussed, and feedback will be incorporated.

Results of Task 3.2 will be collected and described in D3.3, the Accreditation and Qualification System Report, which is due in February 2017.





## 5. Organisation of work

As outlined in the work plan for Task 3.1 and 3.2, WP3 relies on the close and coordinated collaboration of the IHS, external stakeholders, all involved HEIRRI consortium partner organisations as well as the Advisory Boards. This section gives an overview of the organisation of work regarding the relationship of WP3 and other HEIRRI WPs, the roles and involvement of different HEIRRI consortium members, of the Advisory Boards as well as of external stakeholders and experts.

### 5.1 Relationship of WP3 and other HEIRRI work packages

WP3 has several links to other HEIRRI work packages (see Table 8 for an overview). It builds upon findings of and decisions made in other WPs and gives important inputs for other WPs as well.

Table 8 Relationship between WP3 and other HEIRRI WPs

HEIRRI work package	How does this WP feed into WP3?	How does WP3 feed into this WP?
WP1 Multi-stakeholder Forum	Feedback on draft and preliminary final training programs (Multi-stakeholder Forum, ILDE platform).	HEIRRI training programs.
WP2 Stock taking/inventorying	Best practices, experiences, and crucial aspects of RRI teaching and learning.	—
WP4 Training Materials Elaboration	Draft training materials.	HEIRRI training programs.
WP5 Initial/Pilot Experiences	Feedback on training programs.	HEIRRI training programs.
WP6 Internationalization	Feedback and comments from international networks.	Draft and final training programs.
WP7 Communication and Dissemination	Dissemination guidelines.	Draft and final training programs.
WP8 Formative Evaluation	—	Data and documents necessary for formative evaluation.
WP9 Coordination and Management	Management guidelines.	—

In its first phase (Task 3.1.1), WP3 depends on the input of WP2, best practice examples, and empirical



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evidence regarding RRI teaching and learning, because these will serve as starting point for discussions in the series of stakeholder workshops (Task 3.1.2). Furthermore, the development of training programs will also benefit from receiving (draft) training materials. Thus, it will be possible to consider the content of the training programs in structuring them. At the same time, WP3 will identify certain requirements vis-à-vis the content and type of training materials, thus have an impact on the work and output of WP4 too. WP5, the pilot experiences, heavily relies on the work of WP2, WP3, and WP4. In order to be able to start organising and implementing the pilot experiences at HEIs, it is necessary that the training programs and the training materials are finished and aligned in time. Otherwise, it would be difficult to include them into the schedule of the semester at the different HEIs.

WP1, WP6, and WP7 will provide information as well as a platforms for disseminating and discussing the preliminary results and products (training programs) from WP3, especially the Multi-stakeholder Forum (WP1) and the ILDE platform, the international network (WP6), and the dissemination guidelines (WP7).

WP3 will also collaborate with WP8 on the formative evaluation, since the IHS will provide with all data and documents necessary for this purpose.

## **5.2 HEIRRI consortium partners**

The Institute for Advanced Studies (IHS) coordinates HEIRRI WP3 and co-designs the training programs together with the HEIRRI consortium partners

- Universitat Pompeu Fabra (UPF),
- University of Bergen (UIB),
- Aarhus University (AU),
- University of Split (UNIST),
- “la Caixa” Foundation (FBLC),
- European Network of Science Centres and Museums (ECSITE),
- and the Catalan Association of Public Universities (ACUP).

Thereby, different HEIRRI partners will take over different tasks according to their institutional profile and allocation of project time and resources for WP3. Table 9 gives an overview of the responsibilities and allocated time of HEIRRI consortium members in WP3.



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**Table 9 Responsibilities and allocation of time of HEIRRI consortium members in WP3**

	<b>UPF 2 PM</b>	<b>UIB 2 PM</b>	<b>AU 1 PM</b>	<b>IHS 7 PM</b>	<b>UNIST 2 PM</b>	<b>FBLC 1 PM</b>	<b>ECS 0,5PM</b>	<b>ACUP 1 PM</b>
<b>D3.1 Guide of Work</b>				0,5				
<b>Task 3.1 Design of Training Programs</b>								
• Task 3.1.1: Use of WP2 stock taking				0,5				
• Task 3.1.2: Stakeholder Workshop				3,5				
• Task 3.1.3: International consolidation	1,5	1,5	1	0,5	1,5		0,5	
• Task 3.1.4: Finalisation of training programs	0,5	0,5		1	0,5	0,5		0,25
<b>Task 3.2 Accreditation and Qualification System</b>				1		0,5		0,75

The IHS will not only coordinate WP3, but also implement several Tasks within WP3. The IHS will use the findings of the stock taking in close cooperation with WP2 (Task 3.1.1). It will conduct a series of four stakeholder workshops in Vienna, co-construct draft training programs with various HEI stakeholders (Task 3.1.2), and collect and use the input of the international consolidation in order to finalise the training programs (Task 3.1.4). Furthermore, it will work on making the training programs suitable for accreditation and qualification systems (Task 3.2).

The main work of the HEIRRI consortium partners will be to contribute to the internationalisation of the draft training programs (Task 3.1.3) and the finalisation of the training programs (Task 3.1.4). UPF, UIB, AU, and UNIST will present and discuss the draft training programs in their countries and HEIs with local stakeholders, and draft internal reports on the findings. ECSITE will gather feedback within its network and will be involved in finalising the training programs.

“La Caixa” Foundation (FBLC) will guarantee the adaptation of results and outputs to the RRI Tools Platform and their open access availability, and support the IHS in Task 3.2 together with ACUP.

Besides, HEIRRI project partners will be asked to give feedback on several other occasions and points in the working process:

- The PEC meetings in M10 (face-to-face), M12 (video conference), and in M15 (face-to-face) will be used to present preliminary findings and to discuss the overall progress and critical points.
- (Certain) HEIRRI consortium partners will be asked to give feedback on working material (e.g.



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adopted results from WP2, input to stakeholder workshops, etc.) and on the final training programs via email or additional ad-hoc video conferences (if necessary). These materials will be sent to the consortium partners as soon as they are available.

- Furthermore, the ILDE platform will be used to present working documents and draft training programs.

### **5.3 Advisory Boards**

According to the Coordination and Management Plan (D 9.1), the three different Advisory Boards – the Multidisciplinary Contents Council (MCC), the Business & Entrepreneurship Advisory Board (BEAB), and the Science Communication & Internationalization Advisory Board (SCIAB) – will contribute to the development of the training programs.

At different points in the development process, they will be asked for feedback on preliminary documents and products, including

- the draft training programs before they are introduced to other stakeholders in the international consolidation phase (August/September 2016);
- the findings from the international consolidation (November/December 2016);
- the training programs in an advanced version (January 2017);
- the formal structure template for the training programs developed in Task 3.2 (October 2016).

The co-chairs of the Advisory Boards will make sure that all members receive the respective information and documents in time and that the feedback is gathered systematically. For each piece of material for review, the IHS will formulate a limited number of open key questions to be answered – if possible – in order to give some sort of guidance to the Advisory Board members and to make the use of their feedback as effective as possible.

After the finalisation of the training programs, they will be shared with the Advisory Board members, which will be asked to further circulate them in their professional networks.

### **5.4 HEI stakeholders and external experts**

HEIRRI WP3 aims at co-developing RRI training programs with HEI stakeholders and experts. They play a vital and active role in several WP3 Tasks:

- Around 15 HEI stakeholders will participate in the Vienna workshop series, present and discuss their experiences with RRI teaching and learning, and co-develop RRI training programs.
- In the international consolidation phase, in each of the workshops circa eight stakeholders will participate.
- Stakeholders can also participate in discussions and give input in the Multi-stakeholder Forum





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(Online and Offline), including the first HEIRRI Conference in March 2016 in Barcelona.

The involved stakeholders are not paid for their efforts and time, but they will participate in the workshops because of their (institute's) motivation to learn about RRI teaching and learning and to become part of the development process of the HEIRRI training programs. Therefore, it is important to approach them in an engaging and constructive way:

- Communication will be open, continuous, and in-time.
- Participating stakeholders will be informed about the purpose of different steps in the process as well as about the HEIRRI project in general.
- The process will be organised as flexible as possible (considering the project time schedule and other limiting factors), especially regarding the workshop scheduling.
- They will receive all of the documentation of the process (if this is possible considering data privacy and data protection of others), including the final training programs.
- If they do not object, their efforts will be acknowledged by mentioning them by name and institution in the respective documents.



## 6. Time schedule

Table 10 summarises the time schedule and progression of the different tasks and sub-tasks of HEIRRI WP3. As indicated (“X”), the main two deliverables – besides D3.1, the report at hand – are due at the end of WP3, in February 2017 (M18). They will be circulated within the consortium and Advisory Boards (“Y”) approximately one month before the deadline.

The majority of work in designing the training programs (Task 3.1), the series of stakeholder workshops in Vienna as well as the international consolidation phase with workshops in different European countries will be carried out in May and June as well as from September to November 2016. Based on experiences from previous projects, it is hard to find common dates for workshops or other stakeholder involvement activities in July and August due to the holiday season. These two months will be used to edit and review the data collected by then and to focus on other Tasks (e.g. Task 3.2.1, Task 3.2.2).

Over the course of WP3, there is a total of five PEC meetings (face-to-face or via Skype), which will provide further possibilities to discuss the (preliminary) findings and further processes of WP3 (“O” in the table below).

**Table 10 Time schedule for HEIRRI WP3**

Project month	6	7	8	9	10	11	12	13	14	15	16	17	18
Month	02	03	04	05	06	07	08	09	10	11	12	01	02
Year	16	16	16	16	16	16	16	16	16	16	16	17	17
D3.1 Guide of Work		D3.1											
<b>Task 3.1 Design of Training Programs</b>													
• Task 3.1.1 Use of WP2 stock taking													
• Task 3.1.2 Stakeholder Workshops				WS1	WS2, WS3			WS4					
• Task 3.1.3 International consolidation													
• Task 3.1.4 Finalisation of training programs													
• D3.2 Training Programs													X
<b>Task 3.2 Accreditation and Qualification System</b>													
• D3.3 Accreditation & Qualification Report													D3.3
PEC meetings		X			X		X			X			X

## 7. Sources

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Figure 2 WP3 Workflow

