e-IRG Workshop under Slovenian EU Presidency
Session: Careers in e-Infrastructures

Executive Masters
in Management of Research Infrastructures

Marialuisa Lavitrano
University Milano Bicocca
• RI: the contest
  ➢ woman in science
  ➢ need for managerial training

• Executive Masters in Management of Research Infrastructures

• Impact on gender equality

• RItrainPlus project:
  ➢ targeting current managers of Ris
  ➢ preparing the future managers and operators of Ris
  ➢ gender dimension in the project
SHE FIGURES 2021 presents data on the European Commission's gender equality priorities in the field of research and innovation policy.

**Woman in science**

Women are close to reaching gender parity among doctoral graduates...

Women represent 24.9% among self-employed professionals in Science and Engineering (S&E) and Information & Communication Technologies (ICT) (2018, Eurostat).

...but are still under-represented in technical professions.

Women are under-represented at the highest level in academia...

Overall, women account for 42.3% of academic staff.

... and in decision-making positions.

23.6% of heads of higher education institutions are women (2019, DG R&I Women in Science database).
Research Infrastructures are a vital element for the realization of the European Union as a knowledge-based society. RIs are at the core of the Open Science and Open Innovation strategy and a major factor in its success being standing pillars for excellence in science.

The EU and Member States invested a significant budget in the development of Research Infrastructure. Questions about how to organize, maintain, manage and finance them have become a major topic.

RI are complex organizations

Managers and operators require a distinct set of competencies to deal with issues such as multinational operations, transnational access and data flow, different social security systems, different cultures, different legal systems etc.
Managers of research infrastructures must have a scientific understanding, be part of the scientific user community and at the same time balance the scientific needs and the technical possibilities with the management skills necessary for the operation of large, expensive facilities and the diplomatic skills required to engage with and define agreements between a large number of international actors.

Relationship between quality of managers and performance

<table>
<thead>
<tr>
<th>Productivity gap between average performers and high performers, by job complexity, %</th>
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<tbody>
<tr>
<td>Low complexity</td>
</tr>
<tr>
<td>Medium complexity</td>
</tr>
<tr>
<td>High complexity</td>
</tr>
<tr>
<td>Very high complexity</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>85</td>
</tr>
<tr>
<td>125</td>
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<tr>
<td>800</td>
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</tbody>
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Source McKinsey global survey: "war for talents"

In highly complex organizations, high performers are an astounding 800% more productive.
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Rltrain project # 654156 (2015-2020)

Launch of a unique international management development programme

EXECUTIVE MASTERS IN MANAGEMENT OF RESEARCH INFRASTRUCTURES

SEPTEMBER 2017 – MARCH 2019

In collaboration with Rltrain Partners
UNIMIB developed EMMRI, a custom program that is designed for RIs, just like a tailored suit.

- Based on an in-depth analysis of an Infrastructure’s needs and operating context
- Designed to suit the profile of the organisation;
- Entirely tailored as far as contents, tools, duration and place are concerned;
- Flexible and adaptable to the needs of science professionals and RIs

Rltrain project # 654156 (2015-2020)
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- EMMRI is a unique international management development programme tailored to the specific needs of Research Infrastructures.
- The programme is designed to give experienced science professionals the skills and knowledge they need to take on greater managerial responsibilities.
- The programme covers competencies required to meet the needs of RIs in the planning, construction and operation phases.
- The aim is to develop the new generation of executives of national and international RIs who understand the necessity of undergoing professional training to acquire managerial and leadership skills.

EMMRI [http://www.emmri.unimib.it](http://www.emmri.unimib.it)
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• Delivered by the University of Milano-Bicocca

• The Faculty is composed of experienced academics from UniMiB, guest faculty from other prominent business schools, research infrastructures, and selected organisations (29 visiting professors)

EMMRI http://www.emmri.unimib.it
3-4 days modules over a period of 18 months for a total of 12 modules, 7 on-campus and 5 full online

**EMMRI - Programme structure**

**CORE MODULES**
- Governance and organisation
- Developing a sustainable funding model for RIs
- International law and compliance
- Financial Management - I
- Financial Management - II
- Leadership and team building
- Service provision
- Strategic management of RIs
- Business development and innovation in the RI context

**OPTIONAL MODULES**
- Planning an RI
- Setting up an RI
- Leading an operational RI

40 ECTS

**Field project**

20 ECTS

- Lectures,
- talks by experts from RIs and guest speakers,
- webinars
- case study analysis
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The learning format

1. PRE-MODULE ASSIGNMENT
   - Pre-readings
   - Webinars
   - Assignments

2. IN-CLASS
   - Feedback
   - Case analysis
   - Team work
   - Discussion
   - Learn from Leaders

3. DISTANCE
   - Webinars
   - Q&A
   - Individual assignments (case development)

4. FOLLOW-UP
   - Assessment
   - Feedback

5. FIELD PROJECT
   - Analysis, sharing, design
   - Coaching
Impact on gender equality

- The learning activities developed within the Master are focused on making individuals more aware of gender stereotypes and about gender inequalities they face as professionals in different fields.
- The design of the courses consider gender-sensitive contents, methodology, language and visual materials.
### EMMRI class profile - at a glance

<table>
<thead>
<tr>
<th></th>
<th>EMMRI#1</th>
<th>EMMRI#2</th>
<th>EMMRI#3</th>
<th>EMMRI#4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong></td>
<td>41%</td>
<td>48%</td>
<td>73%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Average age</strong></td>
<td>45</td>
<td>44</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td><strong>Under 40</strong></td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Over 50</strong></td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Countries represented</strong></td>
<td>10</td>
<td>12</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

**Selection criteria:**
1. Experience, current position and training needs
2. Motivation and potential (sponsorship from the RI top management)
RItrainPlus project is built on the experience gained RItrain projects and goes further with the aim of designing a training programme to strengthen knowledge and competencies not only for professionals currently working in RIs but also to prepare the future generations of managers and operators and to pave the way for a career path.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101008503.
Targeting current managers and operators of RIs

• Design and delivery of specific cross-field executive programmes (Continuous Professional Development courses), as formal learning activities (including data policy and management);

• Development of a “train the trainers’ kit”, to allow other providers to replicate the courses and to ensure the scalability of Continuous Professional Development courses;

• Development of a coaching programme for managers working in RIs, to reinforce the knowledge transfer methodology with a more personalized and tailored training.
Targeting current managers and operators of RIs

- Development of **staff and knowledge exchange** with a short-term mobility programme at different RI locations, to promote the *learning on the job* approach

- Development of a **Community of Practice** to structure opportunities of knowledge and best practices sharing, through a *peer learning* approach

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101008503.
Preparing the future managers and operators of RIs

- Competency profile definition and identification of training needs for RIs
- Development of Learning Activities to be embedded in existing university programmes at different EQF levels to form an innovative, flexible and certifiable European Longitudinal Learning Track

This will pave the way of a career path for the new generation of RI managers and operators.
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Setting the ground for long-term sustainability of training

• Designing a permanent ‘European School of Management for Research Infrastructures” (ESMRI)
• the School will primarily be responsible for
  ➢ curricula design and development,
  ➢ training of trainers,
  ➢ accreditation of courses delivered by other providers,
  ➢ delivery of specific programmes (Executive Seminars).
  ➢ monitor the Learning Activities embedded
    in different university programmes of different European universities,
  ➢ coordinate LA integration in a Longitudinal Learning Track spanning
    at three different levels of university education
  ➢ certify the track to the students that will successfully complete it.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant Agreement No 101008503.
Gender dimension in the project:

Gender equality will be addressed throughout the project:

• by the evaluation of policies affecting gender equality at RIs (WP2);
• by equipping trainees with strategies to integrate gender, diversity and equality dimensions in their daily work, overcoming social stereotypes and resistances (WP2 and WP3);
• by fostering the community of practice as training ground for the implementation of gender equality (WP4);
• by the delivery and accreditation of high-level courses promoting RRI and gender equality (WP3 and WP5).
• by the development - through ESMRI - of a RI ecosystem empowering gender equality (WP5).
The Consortium brings together different RIs and CFs from all scientific domains, Universities and Research Performing Organisations hosting infrastructures and/or national nodes of RIs as well as umbrella organisations of university and CF networks.
A strong partnership

• Selected **RIs of different scientific fields** to provide advice on management training needs and contribute to the development of the new School’s governance model

• Selected European **Universities** available to pilot the re-design and development of scientific curricula at undergraduate, graduate and post-graduated level and to develop career path specific for RIs.

• **European Associations of Universities and Leagues** (The GUILD, UNAEuropa, 4EU+, CESAER) to develop specific business and management topics and define guidelines on how to embed them in the curricula of scientific degrees at undergraduate, graduate and post-graduated level

• **All partners** (beneficiary and associated partners) to develop a sustainable governance and funding model for the operations of the new School as well as to pilot new management development programmes.

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MEMBER STATES
Management role in the curricula:
- Need for specific training for managers and operators of RIs
- New topics and skills to be included in the education curricula

RI
Provide career path for people who are involved in RIs.
- Need for specific training for managers and operators of RIs
- Avoid fragmentation of training initiatives

The EUROPEAN COMMISSION
Gender equality priorities in the field of research and innovation policy.

Take home message
Marialuisa Lavitrano
Director Executive Masters in Management of Research Infrastructures
University Milano Bicocca
marialuisa.lavitrano@unimib.it
Linkedin: https://www.linkedin.com/in/marialuisa-lavitrano-b87507201/
Twitter: https://twitter.com/LavitranoML