

# STEP

STEM Research  
Equality, Diversity and Inclusion

## STEP Newsletter ISSUE 4 | JANUARY 2025



[step.ipb.pt](http://step.ipb.pt)





## STEM RESEARCH CONNECTING IMAGINATION AND REALITY

### Dear STEP Community,

Welcome to the STEP Newsletter, where innovation meets inclusivity. In the rapidly evolving fields of Science, Technology, Engineering, and Mathematics (STEM), fostering diversity and ensuring equitable opportunities are essential for driving progress and innovation.

This newsletter is dedicated to exploring the intersection of STEM and Equity, Diversity, and Inclusion (EDI). We highlight groundbreaking research, share inspiring stories, and provide actionable strategies to help build a more inclusive STEM community.

The IV STEP Newsletter showcases past events and outlines future initiatives aimed at advancing STEM and EDI.

Let's take a STEP toward a more inclusive and innovative tomorrow!

Ana Isabel Pereira  
STEP Project Coordinator

### WEBSITE

 [step.ipb.pt](http://step.ipb.pt)



### SOCIAL MEDIA

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## STEP PAST EVENTS

### STEP Workshops

#### # [Building International Partnerships for a Project Success](#)

02 July 2024 | 18 👤

The online session, led by Liisa Hänninen from UCM, explored building international partnerships for Horizon Europe projects, covering consortium requirements, strategic approaches, and practical tips for success. It also introduced newcomers to key workflows, roles, and leadership styles for effective collaboration.

#### # [Management of Research and Innovation Projects within the European Funding Framework](#)

16 July 2024 | 15 👤

The session, given by Cristina Pérez from UCM, addressed the complexities of managing EU-funded projects, with a focus on Horizon Europe. It provided practical guidance on budgeting, financial reporting, and aligning management strategies with European program requirements.

#### # [Exploratory Data Analysis](#)

31 October 2024 | 46 👤

Guided by Clara Vaz from IPB, the session emphasized the importance of exploratory data analysis (EDA) as a foundational step in data science. It focused on aligning data with research questions and adopting systematic approaches to enhance insights and streamline workflows.



#### # [Design and Analysis of Experiments](#)

05 December 2024 | 20 👤

Clara Vaz and Olga Ferreira from IPB led a hands-on workshop on designing and analyzing experiments in chemical and biological engineering. Using an extraction process case study, they guided participants through key steps, including problem definition, factor selection, experimental design, and statistical analysis. The participants worked using the software Design-Expert.

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## STEP PAST EVENTS

### STEP Talks!

#### # [Optimization and Applications](#)

01 October 2024 | 28 👤

The STEP Talk of October took place at IPB and explored advanced topics in distributed optimization, focusing on applications in smart cities, energy systems, and complex infrastructures. The session was divided into three speakers:

- Giulio Ferro (University of Genoa) – Discussed distributed optimization methods for smart city networks and energy systems.
- Michela Robba (University of Genoa) – Focused on optimization models for polygeneration energy districts and smart grids.
- Ana Isabel Pereira (Polytechnic Institute of Bragança) – Presented advanced stochastic optimization methods applied to complex systems.

#### # [Unlocking the Potential of a More Inclusive STEM World](#)

20 November 2024 | 21 👤

Sofiane Mahi's presentation explored how embracing equality, diversity, and inclusion enriches communities and drives innovation in science and technology. It addressed barriers like unconscious bias and systemic issues while offering practical strategies for fostering inclusivity in academic and professional environments.

#### # [How to feed 8 billion people: the role of STEM in addressing this global challenge](#)

18 December 2024 | 20 👤

Joana S. Amaral from IPB presented on addressing global food security challenges in a world of over 8 billion people. She explored how STEM can contribute to achieving the UN Sustainable Development Goal "Zero Hunger," highlighting examples such as alternative protein sources, agri-food by-products, and innovations in food preservation and packaging to create healthier, more sustainable food systems.





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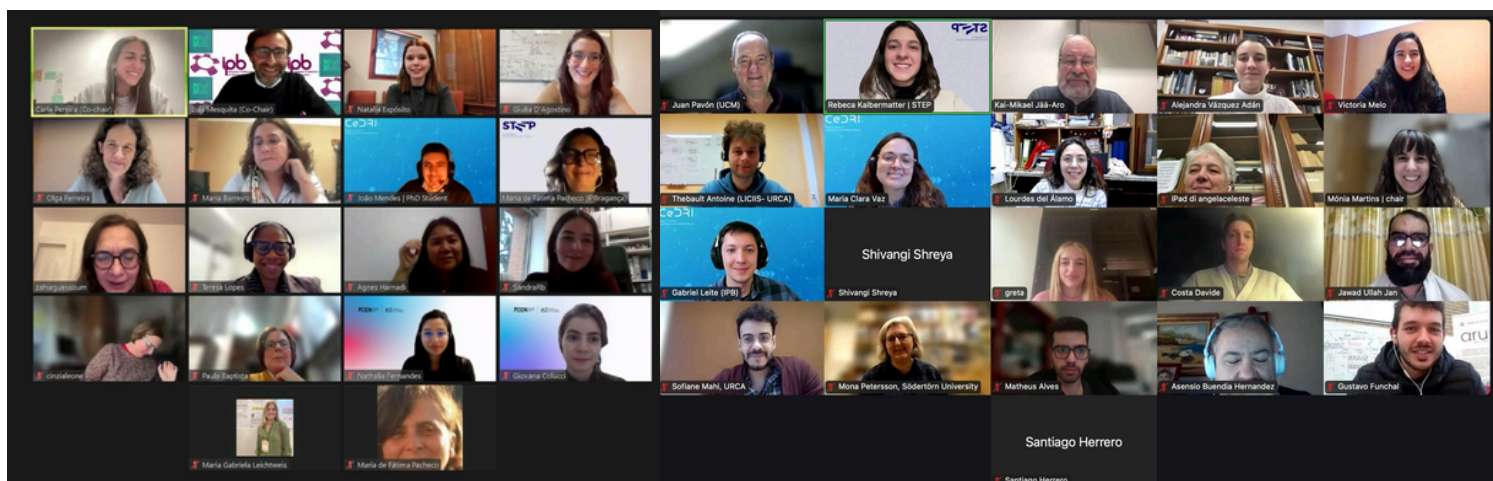
## STEP PAST EVENTS

### # Step-by-Step International PhD Day

11 December 2024

The Step-by-Step International PhD Day successfully kicked off its pilot edition, focusing on fostering collaboration between the research centres and PhD programs within the STEP consortium. This exciting event aimed to bridge the gap between STEM (Science, Technology, Engineering, and Mathematics) research and the critical domain of Equality, Diversity, and Inclusion (EDI).

The day featured twenty-two pitch presentations from PhD students across the topics of Digitalization, Sustainable Construction, Socio-Ecological Systems, and Sustainable Processes and Products. Following the presentations, a lively discussion period opened up the floor to the research community, allowing for valuable feedback, exchange of ideas, and the opportunity to explore potential collaborations across disciplines.



### # Talk for Us: CeDRI's Strategy for Equity, Diversity, Inclusion, Ethics and Civic Engagement

17 December 2024

The *Talk4Us Ciclo de Palestras CeDRI*, led by STEP participants Maria de Fátima Pacheco and Rebeca Kalbermatter, provided an inspiring overview of CeDRI's dedication to equity, diversity, and inclusion (EDI) within the research on and with the community. Professor Maria de Fatima Pacheco discusses her important role as Coordinator of CeDRI's EDI Committee in leading initiatives that promote inclusiveness and ethical practices. She highlighted the committee's focus on facilitating meaningful dialogue and ensuring that members' voices are heard regarding EDI-related concerns. Rebeca Kalbermatter, serving as the contact point between young researchers and the committee, shared her perspective on bridging generational gaps and ensuring that early-career researchers are actively included in shaping a more inclusive research culture.

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## STEP SUMMER SCHOOL

### Boosting scientific excellence and inclusion in academia

16 - 20 September 2024

The STEP Summer School, held at Södertörn University, was an exciting and transformative event that brought together young and senior researchers to boost and foster an inclusive academic environment. The event successfully integrated Equality, Diversity, and Inclusion principles into STEM research, providing participants with valuable skills and insights.

The event happened from 16 to 20 September and had 9 excellent workshops:

- Strategies and Actions for an Inclusive Academy I: Designing EDI Strategies - Zahia Guessoum and Sofiane Mahi (URCA)
- Project design and concept - Cinzia Leone (UNIGE)
- Gender and climate change aspects in engineering education - Angela Celeste Taramasso (UNIGE)
- Gender equality in STEM: from university to work, the Architectural point of view - Alessandro Meloni (UNIGE)
- The power imbalance between formal and informal structures - Karin Hansson (SH)
- Strategies and Actions for an Inclusive Academy II: Interactive Questionnaire on Inequalities and Discrimination - Sofiane Mahi (URCA)
- Femtech: Madeline Balaam (Royal Institute of Technology)
- Crafting Conference Posters: Balancing Information, Aesthetics and Universal Accessibility Principles by Design - Raquel Ávila Muñoz (UCM)
- Crafting Counter-Arguments to Challenge Non-Egalitarian, Sexist, Racist, and Ableist Discourses in Academia - Yanna Franco and Andrés Arias Astray (UCM)

The Summer School successfully ended with a multiplier event, where representatives of each institution of STEP presented the EDI progress and challenges in their academia.





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## BLENDING INTENSIVE PROGRAM

### BIP on Equality, Equity, Diversity and Inclusion in STEM

The STEP Team is thrilled to highlight the recent and upcoming **Blended Intensive Program (BIP) on Equality, Equity, Diversity, and Inclusion (EEDI) in STEM!**

This program brings together a series of engaging events designed to promote EEDI principles across academia and STEM fields. With interactive online sessions and dynamic face-to-face opportunities, this BIP offers a platform to learn from experts, share innovative ideas, and explore inclusive practices in STEM.

Recent events have already sparked meaningful discussions on topics such as feminist actions in STEM, inclusion strategies for students with functional diversity, and addressing biases in AI. These sessions have been impactful in showcasing how EEDI can drive significant advancements in education, research, and professional environments.

The upcoming sessions promise to be equally enriching:

**January 14, 2025, 12h CET:** Teacher Training and Anti-Racist Education (Eva Cristina Francisco from IFSP)

**January 21, 2025, 11h CET:** Research with EEDI Good Practices: CeDRI Case Study (Ana I. Pereira, M. Fátima Pacheco and Rebeca B. Kalbermatter from IPB)

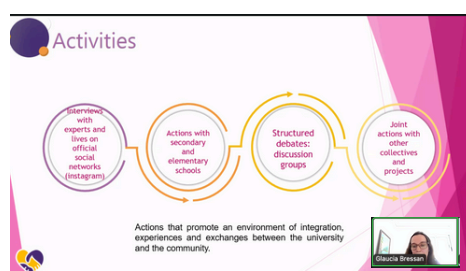
This BIP is an opportunity to:

- Hear from leading experts on cutting-edge topics.
- Engage in essential conversations about inclusivity and innovation in STEM.
- Build connections with a passionate network of colleagues committed to EEDI values.

Find all the information and the respective links to register in our [website!](#)

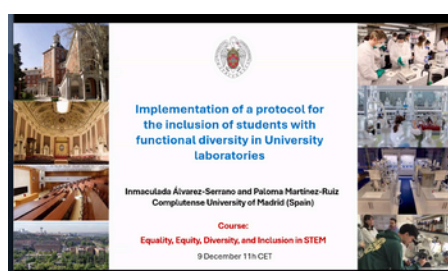
Catch up on previous sessions or watch them again on our YouTube channel:

### [STEP BIP Playlist](#)



**2024 Dec 06: Women in STEM areas: feminist actions in science and technology**

Glauca Maria Bressan from UTFPR



**2024 Dec 09: Implementation of a protocol for the inclusion of students with functional diversity in University**

Inmaculada Álvarez Serrano and Paloma Martínez Ruiz from UCM



**2024 Dec 16: Bias in AI-Generated Images: Reflections from Informal Experiments**

Raquel Ávila Muñoz from UCM

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## NEXT EVENTS

### **BIP on Equality, Equity, Diversity and Inclusion in STEM**

Next sessions:

#### **January 14, 2025, 12h CET**

Teacher Training and Anti-Racist Education, by Eva Cristina Francisco from IFSP (Brazil)

#### **January 21, 2025, 11h CET**

Research with EEDI Good Practices: CeDRI Case Study, by Ana I. Pereira, M. Fátima Pacheco and Rebeca B. Kalbermatter from IPB (Portugal).

#### **February 10-14, 2025**

From February 10th to 14th, 2025, the STEP BIP will hold its Face-to-Face Week at the Polytechnic Institute of Bragança. This week promises a series of engaging sessions designed to promote Equality, Diversity, and Inclusion (EDI) in STEM. The key highlights include themes on Breaking Barriers: Promoting Equality, Diversity, and Inclusion in STEM by Yanna Franco (UCM), Inclusion and Accessibility in the Academic Environment by Angela Celeste Taramasso, Marina Perelli and Giuseppe Pestarino (UniGe), Counteracting Dominance Techniques: A practical workshop by Fatima Jonsson (SH) and Collective intelligence and coordination mechanisms by Zahia Guessoum (URCA), and more.

Join us for an inspiring week filled with insightful discussions!

### **V International Conference on Optimization, Learning Algorithms and Applications**

#### **Sestri Levante, Genoa, Italy and Online, 28-30 April 2025**

The V edition of the International Conference on Optimization, Learning Algorithms and Applications (OL2A 2025) will provide a forum where academic scientists, researchers and research scholars will have the opportunity to exchange and share their experiences and research results on the challenges of optimization and learning methods and their applications.

The members of the STEP Team, Ana I. Pereira (IPB), Juan Pavon (UCM) and Raquel Muñoz (UCM), are promoting the special session Bias in Artificial Intelligence Models during the conference on 30 April.

Paper submission by 31 January 2025. For more information, access <https://ol2a.ipb.pt/>

**The next sessions of STEP Talks! and STEP Workshops will be available soon.**

### **More Information**

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## COMMUNICATION AND DISSEMINATION

### Round Table at Jaca Town Hall

18, 19 January 2024

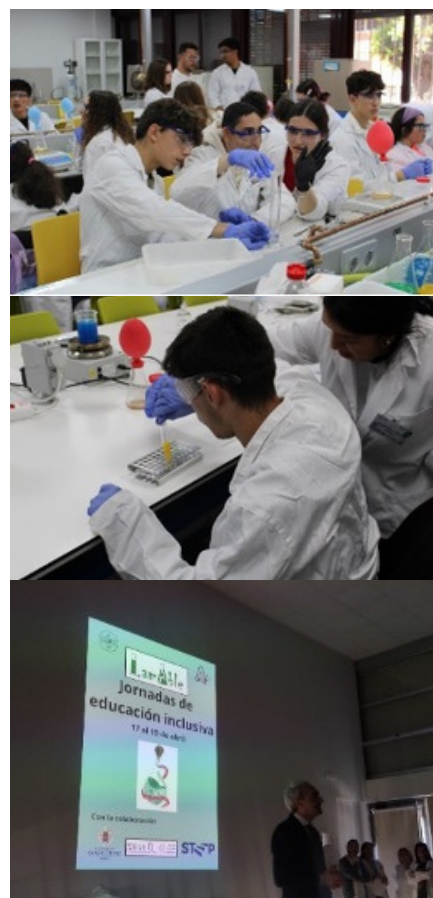
The Pirineos Secondary School and the City Council of Jaca (Huesca, Spain) organized a series of events on 18 and 19 January to promote various social inclusion projects, in which they invited us to participate because they had heard about our project on science for all people also supported by the Territorial Section of Madrid of the Royal Spanish Society of Chemistry. These events consisted of a round table at the Jaca City Hall and workshops in the laboratories of the IES Pirineos. In two of these workshops, the Synthesis of pyrophoric iron was carried out jointly by students from the centre itself and from the Ignacio Claver Centre, as well as from the Special Education Classroom of the Biello Aragón Secondary School in Sabiñánigo (Huesca, Spain).

### Workshops at IES Las Musas

17 - 19 April 2024

Nine inclusive scientific workshops were also held at the Las Musas Secondary Education Institute (IES) (Madrid). The experiments carried out in each workshop were “Formation of a precipitate from two solutions of soluble salts”, “Determination of the relationship between the concentration of a solution and its density. Flotation and density concepts were also applied to understand how solutions with different densities can be separated”, “Verification of the law of conservation of mass. Lavoisier's Law” and “Catalytic decomposition of hydrogen peroxide with potassium iodide”.

Each experiment was carried out by a trio made up of a Vocational Training (FP) person from the IES Las Musas, another person from the same center but from Compulsory Secondary Education (ESO) and a third person with an intellectual disability from a special education center. The special education centers invited to the inclusive scientific workshops were the Public Special Education Centre (CPEE) La Quinta (El Pardo), Fundación Goyeneche (Madrid) and the Special Education School A la Par (Madrid). On each of the three days, around 30 people from FP, 25 from ESO and 25 from a special education center participated. At the end of each workshop, other recreational activities were organized to deepen the interaction between the three groups of students involved. Before and after the workshops, tests were handed out (with pictograms for those who did not master reading and writing) to evaluate the impact of the workshops on the students.



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## COMMUNICATION AND DISSEMINATION

### IV International Conference on Optimization, Learning Algorithms and Applications

24 - 26 July 2024

The STEP project was one of the sponsors for the OL2A conference, which took place in Universidad de La Laguna, Tenerife, Spain, from 24 - 26 July 2024. The event was attended by more than 70 participants including academics, researchers, teachers and guests.

### Best practices in adding an EDI dimension to research and teaching

23 October 2024

Participate in the bi-annual UniGE workshop as part of Ulysseus WP6. The workshop will present strategies used in EU-funded projects and scientific association activities. In all cases, the aim is to train participants in the application of EDI-friendly practises and strategies at both individual partners and partnership level. The speakers will also address challenges and difficulties, as not all experiences are smooth or entirely positive, but we can also learn from them. Alessandro Meloni, from UniGe, represented the STEP Team with the presentation *STEP-by-step: EDI activities in scientific and didactic fields for an EU funded project*.

### Workshop at the IES Gregorio Peces Barba

13 November 2024



The workshop Synthesis of pyrophoric iron was also held at the IES Gregorio Peces Barba (Colmenarejo, Madrid, Spain)) on November 13 with students from the center and also from the Public School of Special Education La Quinta de El Pardo. Two groups were formed, one with students exclusively from Gregorio Peces Barba and another formed by pairs with students from both centers. Again, tests were given before and after the activities with the idea of evaluating the impact of the workshops on the students and also studying possible differences in the results of both groups. The workshops were led by Chemistry degree students and a master's student from the Faculty of Physics of the UCM, after two preparatory sessions at the Faculty of Chemical Sciences of the UCM, where they were guided about the concepts, methodology, didactics and interaction with groups in which there is a notable cognitive diversity.

### Countering violence and discrimination at UniGe

28 November 2024

A time to share and discuss the work done with stories of experiences, good practices and ongoing projects. They talk about the Positive Action Plan, the new PIAO - Integrated Plan of Activities and Organisation, the Career Cias, the Gender Equality Plan, the anti-violence desk, the guidelines on gender language, the #finiscequi Words of the CPO, the CPO, the many events and interventions in support of the various university components. Angela Taramasso, from UniGe presented the session *Equal Opportunities Committee, Single Guarantee Committee and Trust Advisor recount the past 6 years of work*.



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## COMMUNICATION AND DISSEMINATION

### RonDa, with D for Human Rights

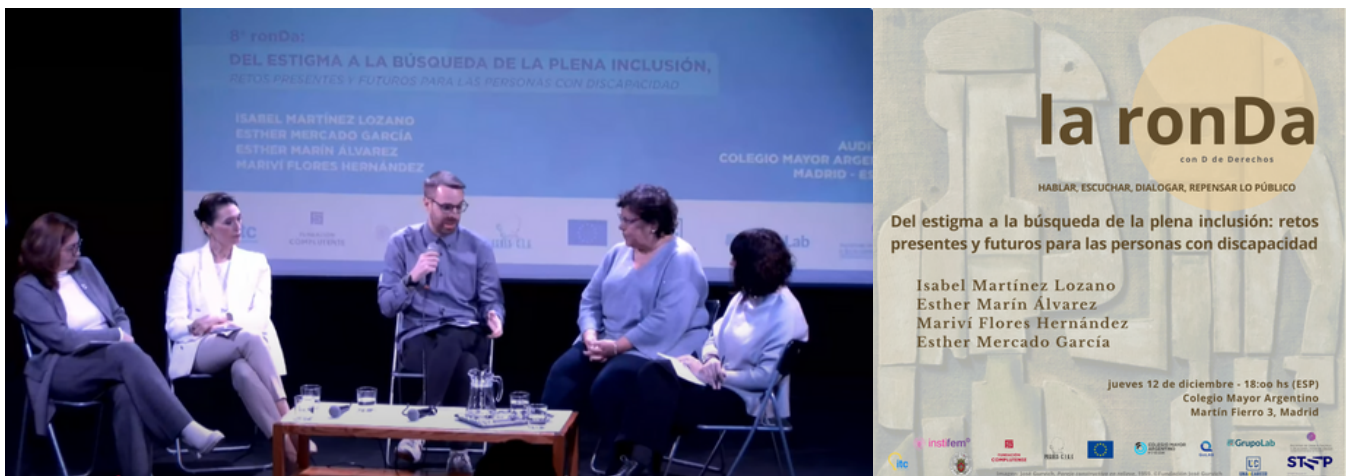
The last 'RonDa, with D for Human Rights', at UCM, explored the road travelled by persons with disabilities towards full inclusion, analysing the impact of stigma and celebrating the progress made in social, educational, labour and legal fields.

The Roundtable was held on 12 December under the title 'From stigma to the quest for full inclusion: present and future challenges for people with disabilities'.

The participants were:

- 1- Isabel Martínez Lozano. Director of Programmes with Universities and Promotion of Young Talent at the ONCE Foundation.
- 2- Esther Mercado García. Lecturer in the Faculty of Social Work at the UCM. Deputy Director of the UCM Diversity and Inclusion Unit.
- 3- Esther Marín Álvarez. Senior Customer Experience Specialist in the Corporate Customer Experience and Sales Department of ILUNION. Lecturer at the School of Engineering and Technology of the UNIR.
- 4- Mariví Flores Hernández. Programme Coordinator at Plena Inclusión Madrid'.

The event was disseminated online in real time, with special interest in Latin America, and it is available at [YouTube](#).



### Inclusion, communication institutionnelle et traduction - Journée en mémoire de Marie-Christine Jullion, Professeure de langue et de traduction françaises

05 December 2024

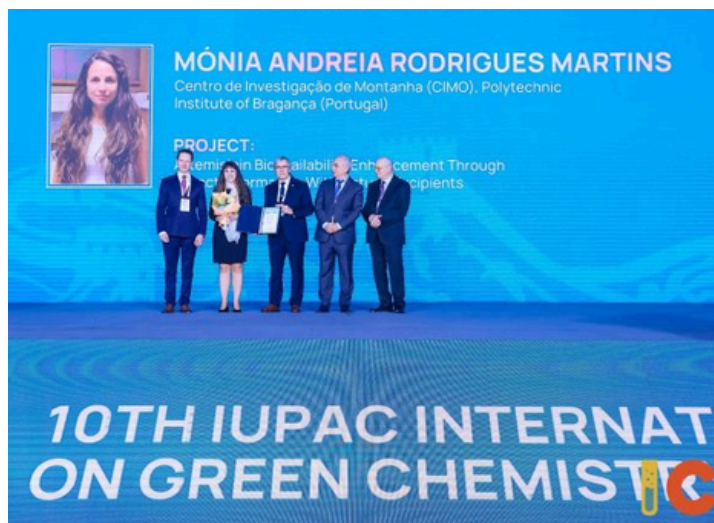
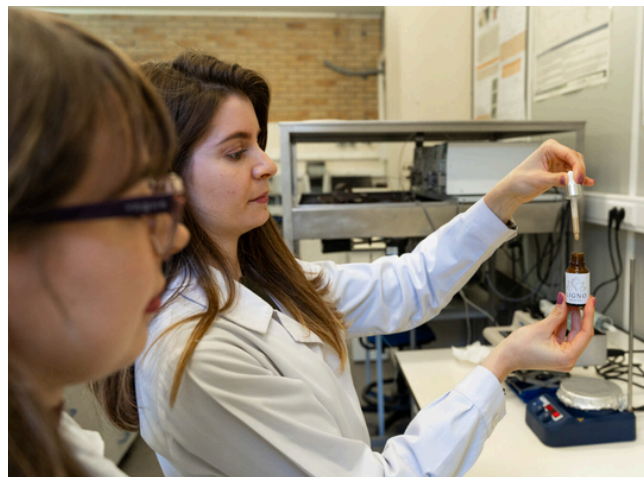
"Inclusion, Institutional Communication, and Translation" (Turin, Italy), is organized by the DoRiF research group (Documentation and Research Center for the Teaching of the French Language in Italian Universities) in collaboration with the ESOMAS Department and the Department of Foreign Languages and Modern Cultures. The event is dedicated to the memory of Professor Marie-Christine Jullion, who led the group's research activities for many years. Contributions to the day will explore the discursive representations of inclusion and their translatability across various institutional contexts. The project STEP was represented by Rita Bencivenga, Angela Celeste Taramasso et Cinzia Leone.

## STEM RESEARCH CONNECTING IMAGINATION AND REALITY

### NEWS

#### 11th Entrepreneurship and Innovation Award Crédito Agrícola

On November 20, 2024, the researcher Giovana Colucci, from the Mountain Research Center (CIMO-IPB), for winning the Entrepreneurship and Innovation Award, in the category Valorization of Endogenous Resources. Her project, LignoBeauty, consists of a simple and scalable process that transforms lignin into a multifunctional ingredient (emulsifier, antioxidant, UV booster) for incorporation into cosmetic formulations (high added value product).



#### 10th IUPAC International Conference on Green Chemistry

On October 19, 2024, during the 10th IUPAC International Conference on Green Chemistry, researcher Mónia Martins, from the Mountain Research Center (CIMO-IPB), also received a research grant from Green Chemistry for Life, a joint program of UNESCO, the International Union of Pure and Applied Chemistry (IUPAC) and the PhosAgro Group. Her project focuses on increasing the bioavailability of artemisinin, a crucial compound used in the treatment of malaria, using natural excipients.

**Congratulations Giovana Colucci  
and Mónia Martins!  
You are inspiring a lot the new  
generations of researchers!**