



Project:

BioMeld

Grant Agreement (GA) No. 101070328

“A MODULAR FRAMEWORK FOR DESIGNING AND PRODUCING BIOHYBRID MACHINES”

Call: HORIZON-CL4-2021-DIGITAL-EMERGING-01

Type of action: Research and Innovation action (RIA)

Start date of project: 01/10/2022

Duration: 36 months

D5.5: EARLY CAREER DEVELOPMENT

DELIVERABLE FACTSHEET

Project title Acronym Number		A Modular Framework for Designing and Producing Biohybrid Machines BioMeld 101070328	
Due Date:	31/03/2024	Date of submission:	30/03/2024
Month of Project	M18	Month of submission:	M18
Title of deliverable:	D5.5 – Early Career Development	Work Package:	WP5 – Management and Impact
Dissemination level:	Public	Version/Status	1.0
Deliverable leader (Name Organisation)	SSSA	Editor(s)	Lorenzo Vannozi (SSSA)
Contribution of partners	SSSA, UNICA, IBEC, UWE, UNSPF		
Final review and approval	SSSA, UNICA, IBEC, UWE, UNSPF		
Keywords	Early career researcher, biohybrid machine; workshop; short-term visit; lecture; skill		



	improvement, mentoring.	
Abstract	This deliverable describes the activities promoted to serve early career researchers (ECRs) growth within the BioMeld project. Through a combination of skill-building workshops, networking opportunities, mentoring, and personal support, ECRs will be equipped with the tools and knowledge necessary to thrive in their research endeavors and make meaningful contributions to their fields, and to the project.	
Document change history		
Date	Authors	Description
13/02/2024	Lorenzo Vannozi (SSSA)	First draft
26/02/2024	Judith Fuentes Llanos (IBEC)	Contribution to the first draft from IBEC
26/03/2024	Stefano Lai (UNICA)	Contribution to the first draft from UNICA
26/03/2024	Anthistenis Tsompanas (UWE)	Contribution to the first draft from UWE
25/03/2024	Lorenzo Vannozi (SSSA)	Second draft
28/03/2024	Stefano Lai (UNICA)	Contribution to the second draft from UNICA
29/03/2024	Lorenzo Vannozi (SSSA)	Third draft

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EXECUTIVE SUMMARY

The task of early career researcher (ECR) development involves designing initiatives to support individuals in the early stages of their research careers. This includes understanding their needs, creating targeted programs, and fostering a supportive environment. Within the BioMeld project,



ECRs engaged in workshops, short-term visits, and mentoring, as detailed further in subsequent sections.

Introductory comments are given in Section 1, while the description of main activities is given in Section 2. Workshops are described in Section 2.1, mentoring activities in Section 2.2 and Short-term visits in Section 2.3. In total, we organized 8 short-term visits, 8 mentoring activities, 1 workshop was held, and one is scheduled.

LEGAL NOTICE

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement number 101070328.

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LIST OF ABBREVIATIONS

Abbreviation	Description
ECR	Early Career Researcher

1 DESCRIPTION OF TASK

Commencing a career journey marks a crucial phase in an individual's professional path. In today's landscape, characterized by constant changes and intense competition, the importance of thoughtful planning and deliberate steps in the early phases of career development is crucial to guarantee the future perspectives of early career researchers (ECRs).

Acknowledging the pivotal nature of this initial stage, the work carried out in this task arises as an essential aid to the researchers that are part of the BioMeld consortium, to individually guide them to improve their skills, and navigate the complexities and possibilities present in the early stages of their careers.

2 DESCRIPTION OF WORK AND MAIN ACHIEVEMENTS

The task of early career researcher development involves designing and implementing initiatives to support the growth, advancement, and success of individuals in the early stages of their research careers. This includes identifying the needs and challenges faced by early career researchers, developing targeted programs and resources to address these needs, and fostering a supportive and inclusive research environment. Key components of the task may include providing mentorship and professional development opportunities, facilitating networking and collaboration, promoting work-life balance, and advocating for the career progression of ECRs within the academic community. Ultimately, the goal is to empower early career researchers to thrive in their research endeavors and make meaningful contributions to their fields of study.

The Consortium was expected to organize workshops with a special attention on the career development for ECRs on leadership, academic writing, funding acquisition, starting a research lab, etc. In addition, the Consortium aimed at offering ECRs a range of career development options: specialists mentoring from senior academics, access to all Consortium's combined facilities, development of communication skills, and short-term visits to partners to participate in novel collaborative tasks, to further develop their skills and to facilitate establishing common scientific language.

The activities in which ECR were engaged within the BioMeld project were mainly classified into workshops, short-term visits and mentoring, as reported in more details in the following sections.

Workshops were defined as potential contexts of ECR development in a structured and interactive session designed to provide participants with specialized knowledge, skills, and resources relevant to their research careers. These workshops were tailored to the needs and interests of ECRs, covering a wide range of topics aimed at enhancing their research capabilities, professional development, and career prospects. Overall, workshops in ECR development served as valuable opportunities to acquire new knowledge, skills, and resources, connect with peers and experts in their field, and advance their research careers and professional aspirations. Short-term visits were conceived as a research visit or academic exchange in a focused period during which an ECR spent time at another institution, laboratory, or research group to collaborate, learn, and enhance their skills and knowledge. These visits were instrumental in supporting the early career development of researchers for several reasons, such as knowledge exchange, skill development, networking, cultural and academic exposure, and research opportunities. In particular, short-term visits may also lead to collaborative research projects, joint publications, or presentations at conferences, in the next future. These research outcomes will surely enhance the ECR's academic profile, contribute to their publication record, and increase their visibility in the academic community.

Mentoring activities in the ECR path encompassed a range of structured interactions and supportive initiatives designed to facilitate the professional and personal development of individuals in the early stages of their research careers. These activities typically involve an experienced mentor guiding and supporting a less experienced mentee through various aspects of academic and research life. Mentoring activities were commonly

undertaken in the ECR path, and involved career guidance, research support, professional networking, skill development, work-life balance, professional ethics and integrity, career mentoring and long-term career planning.

2.1 WORKSHOP

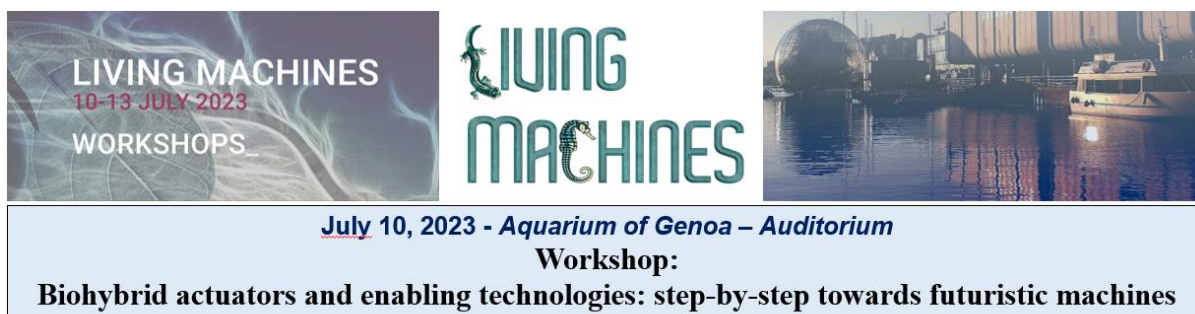
Workshops play a vital role in the development of ECRs by providing opportunities for skill development, knowledge acquisition, networking and collaboration, career development, professionalization, and personal growth. By participating in workshops, ECRs can enhance their research capabilities, expand their professional networks, and position themselves for success in their academic and research careers.

The consortium spent efforts in organizing a few workshops in which ECR also took part. These events were, and will be, the occasion for ECRs to boost their professional development, and their abilities in front of international and well-recognized researchers, as communicative skills. Table 1 summarizes all the Workshops organized by the Consortium partners.

Table 1: Summary of the Workshop organized by the Consortium, in which ECR took part.

Date	Type of the activity	Place	Partner organizer / involved	Personnel involved	Description of the activity	Status
10/7/2023	Workshop	Genova (Living Machine Conference 2023)	SSSA, UWE, UNICA, IBEC, UNSPF	L. Vannozi, L. Ricotti, M.A. Tsompanas, I. Balaz, S. Lai, J. Fuentes, P. Martinez	Workshop organization and talks	Delivered
1/9/2024	Workshop	Heidelberg (BioRob Conference 2024)	SSSA, UWE, UNICA, IBEC, UNSPF	L. Vannozi, L. Ricotti, M.A. Tsompanas, I. Balaz, S. Lai, J. Fuentes, P. Martinez	Workshop organization and talks	Planned

One delivered event was the Workshop “Biohybrid actuators and enabling technologies: step-by-step towards futuristic machine”, organized by SSSA during the Conference “Living Machines” that was held in Genova, and in which the Consortium partners took part, as reported in Figure 1.



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Figure 1: Introductory slide of the Workshop “Biohybrid actuators and enabling technologies: step-by-step towards futuristic machines”.

During this event, other ECRs that are part of the Consortium team participated in the audience. That event was also the occasion for them to listen talks from eminent scientists in the field of bio-hybrid actuators, which were inspiring and educational.

Another planned activity is the organization of a Workshop during the BioRob 2024 Conference, that will be held in Heidelberg during 1-4 September. The workshop was accepted, even if the final schedule is still not public at present. However, this will be another occasion for ECRs to experience their skills, and acquire knowledge from the talks of outstanding scientists in the biohybrid machine field.

2.2 MENTORING

Mentoring is another important pillar of the BioMeld project. Mentoring students is an important aspect of ECR development, as it plays a crucial role in the academic and personal development of students, offering invaluable guidance, support, and encouragement as they navigate their educational journey. Mentoring in early career development is particularly important for several reasons:

- **Skill Development:** Mentoring facilitates the development of essential skills and competencies needed to succeed. Mentors can offer advice on skill gaps to address, provide resources for learning and development, and offer opportunities for hands-on experience or training.
- **Professional Growth and Feedback:** Mentors offer valuable feedback and constructive criticism to help mentees improve their performance and grow professionally. They can provide insights on strengths to leverage and areas for improvement, guiding mentees toward continuous growth and development.
- **Networking and Relationship Building:** Building a professional network is crucial for career advancement. Mentors can introduce mentees to key contacts, provide networking opportunities, and offer advice on how to establish and nurture professional relationships within their industry.
- **Navigating Career Paths:** A mentor can provide guidance and insights based on their own experiences, helping mentees explore various career options, clarify their goals, and make informed decisions.

about their professional trajectory. Mentors can help mentees identify and pursue opportunities for career advancement, whether through promotions, lateral moves, or specialized projects.

In essence, mentoring in early career development provides invaluable support, guidance, and opportunities for growth, helping individuals navigate the complexities of the professional world and lay a solid foundation for long-term success and fulfilment in their chosen field. Table 2 summarizes all the mentoring activities that have been carried out in the project by the Consortium’s partners.

Table 2: Summary of the activities inherent to mentoring.

Date	Type of the activity	Place	Partner organizer / involved	Personnel involved	Status
01/07/2023-04/10/2023	Mentoring	Pisa (SSSA)	SSSA	Carlotta Salvatori, Lorenzo Vannozzi, Leonardo Ricotti	Delivered
01/03/2023-01/10/2023	Mentoring	Cagliari (UNICA)	UNICA	Riccardo Collu, Massimo Barbaro	Delivered
21/04/2023 - ongoing	Mentoring	Bristol (UWE)	UWE	A. Adamatzky, M.A. Tsompanas, H. Alcaraz Herrera	Ongoing
01/10/2023-ongoing	Mentoring	Pisa (SSSA)	SSSA	Andrea Bartolucci, Lorenzo Vannozzi, Leonardo Ricotti	Ongoing
01/10/2023-ongoing	Mentoring	Cagliari (UNICA)	UNICA	Stefano Lai, Usama Mahmood	Ongoing
27/10/2023-ongoing	Mentoring	Cagliari (UNICA)	UNICA	Riccardo Collu, Massimo Barbaro	Ongoing
09/11/2023-ongoing	Mentoring	Cagliari (UNICA)	UNICA	Antonello Mascia, Piero Cosseddu	Ongoing
01/10/2023-ongoing	Mentoring	Novi Sad (UNSPF)	UNSPF	Milos Savic, Vladimir Kurbalija, Dusica Knezevic, Jela Babic	Ongoing

Mentoring activities will surely continue all over the project course, as essential actions to provide ECR with all the required skills to professionally grow, to successfully proceed with the project objectives, and find opportunities in their career.

2.3 SHORT TERM VISITS

Other important and precious activities were the short-term visits, which aided in enforcing joint and integration activities as well as increasing collaborations among partners. Short-term visits play a vital role in the early career development of researchers by providing exposure to new ideas, networking opportunities, career advancement prospects, cultural exchange, professional development, international experience, and personal

growth. In particular, short-term visits provide researchers with the opportunity to immerse themselves in new environments, collaborating with experts in their field or related disciplines. These experiences expose them to novel ideas, methodologies, and techniques that they may not have encountered in their home institutions, broadening their perspective and enhancing their skill set. Short-term visits facilitate networking with colleagues and peers in academia and industry. By engaging with researchers from different backgrounds and institutions, individuals can expand their professional network, establish collaborations, and lay the groundwork for future research partnerships and opportunities. Table 3 summarizes all the mentoring activities that have been carried out in the project.

Table 3: Summary of the short-term visit activities promoted during the project.

Date	Type of the activity	Place	Partner organizer / involved	Personnel involved	Description of the activity	Status
13-18/02/2023	Short-term visit	Barcellona (IBEC)	UNICA-IBEC	Stefano Lai, Judith Fuentes Llanos	Experimental tests	Delivered
18-19/09/2023	Short-term visit	Barcellona (IBEC)	UNICA - IBEC	Riccardo Collu, Judith Fuentes Llanos	Experimental tests	Delivered
24-27/09/2023	Short-term visit	Cagliari (UNICA)	UNICA-SSSA	C. Salvatori, I. Niosi, L. Vannozi, Stefano Lai, Giulia Casula	Experimental tests	Delivered
2-5/10/2023	Short-term visit	Barcellona (IBEC)	UNICA-IBEC	Riccardo Collu, Judith Fuentes Llanos	Experimental tests	Delivered
20/11-02/12-2023	Short-term visit	Barcellona (IBEC)	IBEC-SSSA	A. Bartolucci, L. Vannozi, ...	Experimental tests	Delivered
5-9/02/2024	Short-term visit	Barcellona (IBEC)	UNICA-IBEC-SSSA	Riccardo Collu, Judith Fuentes Llanos, Florencia Lezcano, Andrea Bartolucci	Experimental tests	Delivered

13-18/02/2024	Short-term visit	Barcelona (IBEC)	UNICA-IBEC	Stefano Lai, Judith Fuentes Llanos	Experimental tests	Delivered
8-19/02/2024	Short-term visit	Barcelona (IBEC)	IBEC-SSSA	Andrea Bartolucci, Judith Fuentes, Florencia Lezcano, Maria Crespo, Patricia Zoio,	Experimental tests	Delivered

Figure 2 shows an exemplification image of the joint activities carried out in one of the last short-term visits at IBEC, (5-9/02/2024) in which IBEC, SSSA and UNICA team components took part.

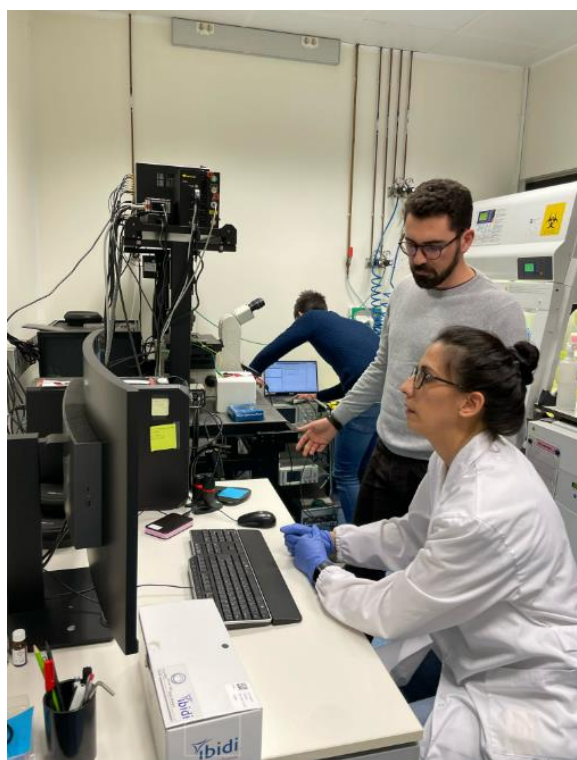


Figure 2: Example of a joint activity carried out at the IBEC facilities during the period 05-09/02/2024.

Short-term visits and joint activities will be supported in the following months of the project, as they are essential in enforcing the collaboration among the Consortium's partners, in view of succeeding in the project objectives and finding room for further collaborations. Also, these experiences are precious for ECRs for their professional growth.

3 CONCLUSIONS

This deliverable describes the activities promoted to serve ECRs growth within the BioMeld project. Through a combination of skill-building workshops, networking opportunities, mentoring, and personal support, ECRs will be equipped with the tools and knowledge necessary to thrive in their research endeavors and make meaningful contributions to their fields, and to the project.

Throughout the project, these activities will be further promoted and supported in the next months of the project.

4 DEVIATIONS FROM THE WORKPLAN

none

5 REFERENCES

None.