



Aquaculture meets Biomedicine: Innovation in Skeletal Health research". Marie Skłodowska-Curie Actions (MSCA) Innovative Training Network (ITN) programme (**BioMedAqu** H2020-MSCA-ITN-2017 n. 766347)



Early Stage Researcher (PhD position) at Portuguese Institute for the Sea and Atmosphere

According to article 12 of the Regulation for Scientific Research Fellowships of IPMA, I.P., is made public that, by deliberation of the Director Council of IPMA, I.P. from 11/06/2019, the opening call was authorized to award one PhD position in "Effects of dietary lipids and mineral contents on marine fish larval development" (ERS 15 – BIOMEDAQU), available at the Portuguese Institute for the Sea and Atmosphere, to be held at the Aquaculture Research Facility (Olhão, Portugal) in the group of aquaculture and biotechnology research (<https://www.ipma.pt/pt/pescas/eppo/>)

We offer an exciting international research environment to study the role of dietary lipids and lipophilic vitamins on the skeletal development of seabream fish larvae. Several aspects of fish larva development (growth, physiology, stress resistance) will be analysed following different dietary formulation, with special focus on skeletal development by identifying genes mediating the skeletogenic effects of essential fatty acids (EFA) and other bioactive substances. A comprehensive multidisciplinary approach (histology, biochemistry, molecular, etc.) will be used to gain knowledge on the aforementioned aspects.

We are looking for highly motivated candidates with a solid background in molecular biology, nutrition, lipid metabolism and cell biology. Experience working with marine fish larvae is desired but not mandatory. Fluency in spoken and written English is required.

For further information contact: Dr P Pousao (pedro.pousao@ipma.pt), Dr N Bandarra (narcisa@ipma.pt) and Dr L Ribeiro (lribeiro@ipma.pt).

The logo for BioMedAQU features the text "BIOMEDAQU" in a white, bold, sans-serif font. The letter "M" is stylized with a white outline and a white fill. To the right of the text, there are three white fish icons of varying sizes, arranged vertically. The entire logo is set against a dark blue rectangular background.

*Aquaculture meets Biomedicine: Innovation in Skeletal Health research". Marie Skłodowska-Curie Actions (MSCA) Innovative Training Network (ITN) programme (**BioMedAQU** H2020-MSCA-ITN-2017 n. 766347)*

BioMedaqu is a Marie Skłodowska-Curie Innovative Training Network (MCSA-ITN) with the primary research aim to create an innovative expertise combining research in skeletal biology of aquaculture fish species with that in biomedical models and humans. In total, 15 Early Stage Researchers (ESRs) will be appointed by the *BioMedaqu* consortium for 36 months each.

BIOMEDAQU PROJECT DESCRIPTION

BioMedaqu aims to bring together the expertise and research approaches from the aquaculture field and the biomedical sector using model fish species. Skeletal anomalies are a continuous problem in farmed fish, affecting fish welfare, performance and product quality. At the same time, human skeletal pathologies are an increasing concern in our aging populations which has triggered research using the tools offered by small fish models. A new generation of creative, entrepreneurial and innovative early-stage researchers equipped with skills to assess and understand the biology of skeletal formation and regeneration and trained to convert resulting knowledge and ideas into accessible tools and services for the long-term control of skeletal pathologies is urgently needed. The *BioMedaqu* Innovative Training Network [ITN] proposes a holistic approach by providing 15 individual, personalised research projects with exposure to scientific, innovative and entrepreneurial training mobility across the ITN. The intersectorial network combines stakeholders from 8 European Universities, a US research hospital, and a Biological Institute. Commercial interests are represented by two Economy departments, one aquaculture, 3 major fish feed production companies, one food additive company, one biomedical company and a software cooperative. Together they cover multiple disciplines including Aquaculture, Anatomy, Artificial Intelligence, Biotechnology, Cell Biology, Orthopedics, Biophysics, Ecology, Evolution, Genetics, Geometric Morphometrics, Molecular Biology, Nutrition, Socio-Economics, and Supervised Learning. This combined expertise enables a highly focused program for training and for developing novel tools and concepts. Methodology will include emerging technologies; generation and analysis of mutant zebrafish lines using the CRISPR/Cas9 methodology; fish skeleton derived cell lines; analytical molecular tools for the genes and proteins; transgenic zebrafish lines e.g. fluorophores in skeletogenic tissue; Neural Network – based analysis of data; standardized methodologies for mass monitoring of skeletal anomalies in fishes or new insights on the interactions between muscle and skeleton, Discrete Choice Analysis methods for decision making. The project will provide a unique and high level of training for a new generation of specialists with transferable skills and enhanced career perspectives who will ultimately aid the efficient development of future control strategies for improved health.

1. WOK PLAN

PROJECT JOB DESCRIPTION MAIN ACTIVITIES/RESPONSIBILITIES:

MAIN ACTIVITIES/RESPONSIBILITIES:

- Enrol in a PhD by research programme and carry out the research and training activities specified by a personal career development plan (PCDP).

- Conduct research in the following topical areas: skeletal development and integrity, nutrition environment, bone cell culture, molecular tools and methods, artificial intelligence, supervised learning, socio-economic studies.
- Undertake mandatory training programs and secondments as required at the facilities of other consortium members such as Italy, Norway, France, Portugal, Belgium, Spain, Germany, and the United States.
- Actively participate in PhD training activities and submit a thesis in fulfilment of the requirements of a PhD degree.
- Participate in outreach and dissemination activities promoting the *BioMedaqu* project and the Marie Skłodowska-Curie Actions (MSCA) programme including the use of social media, video-diaries, newsletters, etc.
- Prepare regular progress reports on the performed research and training activities and present the research outcomes at meetings, project workshops, and to external audiences to disseminate and publicise research findings.
- Work closely with academic and industrial collaborators and facilitate knowledge transfer between the *BioMedaqu* consortium.
- As a MSCA ITN Ambassador carry out undergraduate supervision/demonstrating/teaching duties under supervisor direction and according to university regulations.
- Study and follow the technical literature including academic papers, journals and textbooks to keep abreast with the state-of-the-art in the project topical area.
- Record, analyse and write up results of research work and contribute to the production of research reports and publications.
- Carry out routine administrative duties as requested, e.g. arranging research programme group meetings, maintaining research programme group website, contributing to organisation of *BioMedaqu* project training workshops and events.

PLANNING AND ORGANISING:

- Contribute to the CDP development and provide regular updating of this plan.
- Manage own time and meet agreed deadlines.
- Plan own day-to-day activity within the framework of the agreed research and training programme.
- Contribute to the planning of research and training activities, reports and publications.
- Actively contribute to organisation of outreach activities events.

RESOURCE MANAGEMENT RESPONSIBILITIES:

- Ensure research resources are used in an effective and efficient manner.
- Provide guidance as required to support staff and any students involved with research and training.

INTERNAL AND EXTERNAL RELATIONSHIPS:

- Liaise with research colleagues and support staff on routine matters.
- Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration.
- Attend and contribute to relevant meetings and training events.
- Contribute to the project outreach programmes by establishing links with local community groups industries etc.

2. DURATION

The fellowship, due to start in July 2019, will have a duration of three years. The work to be developed under the present fellowship are of a temporary nature, not having continuity beyond the conclusion of the project.

3. ADMISSION REQUIREMENTS I



Benefits

MSCA-ITN eligibility criteria:

There are strict eligibility requirements for the ESR PhD positions in MSCA-ITN. Please ensure that you qualify before applying, as ineligible candidates cannot be considered.

- Applicants should not have resided or performed their main activity (work, studies, etc) in the country of the host institution for more than 12 months in the 3 year period immediately prior to the start date of the PhD research.
- Applicants for the ESR PhD positions should be in the first 4 years (full-time equivalent) of their research careers and not yet have been awarded a doctorate. This 4 year period is measured from the date of obtaining the degree which would formally entitle to embark on a doctorate.

MSCA-ITN offers an attractive salary and working conditions. A unique feature of MSCA-ITN is that during the PhD research, ESR PhD students will be given the opportunity to perform secondments at the facilities of other consortium members. ESR (PhD students) will benefit from a dedicated training program in the various fields of expertise of the consortium partners. Salary is complemented with a mobility allowance. For more information on MSCA-ITN, visit http://ec.europa.eu/research/mariecurieactions/index_en.htm

	<p>ERS 15 specific requirements</p>	
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JOB TITLE: Marie Curie Researcher (Early Stage)	GRADE: Ac1
<p>JOB PURPOSE: To be an active member of a research project team assisting in the delivery of research and training activities within the scope of a specific project, aiming to meet overall BioMedAQU research objectives and to submit a thesis in fulfilment of the requirements of a PhD degree.</p> <p>One Early Stage Researchers (PhD students) to undertake research in the framework of the project "BioMedAQU: Aquaculture meets Biomedicine: Innovation in Skeletal Health research". Each Early Stage Researcher will be funded for 3 years through the Marie Skłodowska-Curie Actions (MSCA) Innovative Training Network (ITN) programme BioMedAQU H2020-MSCA-ITN-2017 n. 766347, which is an initiative by the EC to foster academic-industrial collaboration in the frame of an innovative and entrepreneurial PhD training program. The successful candidates will be offered the opportunity to enrol on one of the following PhD programmes:</p> <p>ESR15: Effects of dietary lipids and mineral contents on marine fish larval development – The work will focus on the role of dietary lipids in growth, mineral contents and effects on skeletal development by identifying genes involved in mediating the skeletogenic effects of essential fatty acids. Recommendations for dietary EFA levels promoting a correct osteological development in</p>	

aquaculture will be issued.

Main activities/responsibilities:

- Enrol in a PhD by research programme and carry out the research and training activities specified by a personal career development plan (PCDP).
- Conduct research in the above reported topical areas.
- Undertake mandatory training programs and secondments as required at the facilities of other consortium members, as reported below in details (*see **Mandatory activities of the Doctoral Course section***)
- Actively participate in PhD training activities and submit a thesis in fulfilment of the requirements of a PhD degree.
- Participate in outreach and dissemination activities promoting the *BioMedAqu* project and the Marie Skłodowska-Curie Actions (MSCA) programme including the use of social media, video-diaries, newsletters, etc.
- Prepare regular progress reports on the performed research and training activities and present the research outcomes at meetings, project workshops, and to external audiences to disseminate and publicise research findings.
- Work closely with academic and industrial collaborators and facilitate knowledge transfer between the BioMedaqu consortium.
- As a MSCA ITN Ambassador carry out undergraduate supervision/demonstrating/teaching duties under supervisor direction and according to university regulations.
- Study and follow the technical literature including academic papers, journals and textbooks to keep abreast with the state-of-the-art in the project topical area.
- Record, analyse and write up results of research work and contribute to the production of research reports and publications.
- Carry out routine administrative duties as requested, e.g. arranging research programme group meetings, maintaining research programme group website, contributing to organisation of BioMedaqu project training workshops and events.

Planning and organising:

- Contribute to the CDP development and provide regular updating of this plan.
- Manage own time and meet agreed deadlines.
- Plan own day-to-day activity within the framework of the agreed research and training programme.
- Contribute to the planning of research and training activities, reports and publications.
- Actively contribute to organisation of outreach activities events.

Resource management responsibilities:

- Ensure research resources are used in an effective and efficient manner.
- Provide guidance as required to support staff and any students involved with research and training.

Internal and external relationships:

- Liaise with research colleagues and support staff on routine matters.
- Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration.
- Attend and contribute to relevant meetings and training events.
- Contribute to the project outreach programmes by establishing links with local community groups, industries etc.

PhD enrolment

The selected ESR fellows will be enrolled into PhD programme at the University of Algarve. The enrolment procedure may require additional documents in paper.

Research Profiles: First Stage Researcher (R1)

Time line for application process:

- **10 week days: Application period**
- **2 week days: CV's Evaluation**
- **1 week day: Communication list preselected candidates for personal interviews.**
- **2 week days: Skype interviews.**
- **June/July 2019: Hiring of selected *BioMedAgu* ESRs 15.**
- **Starting date: July 2019.**

Mandatory activities of the Doctoral Course

The Early Stage Researchers will complete the Doctoral Course and obtain the PhD title by completing the following mandatory phases:

A) training;

B) during the research project, ESRs will be expected to have at least 1 conference paper at 18 months and a second at 36 months. Each ESR is expected to produce a minimum of two peer-reviewed publications in high-quality journals, two active participations to international congress in the relative scientific sector, and at least one paper on a JCR journal;

C) In *BioMedAgu*, each recruited researcher will be seconded to the organisations of two or more of the partners for a duration of several weeks/months up to 30% of his/her recruitment period. Normal practice during secondments is for the researchers to keep their contract with the sending organisation, which also pays the travel and subsistence expenses (e.g. accommodation). During their secondment, researchers receive supervision and training at the premises of the receiving organisation. Secondments are differentiated from short visits, i.e. of a few days. Secondments are mandatory. If you apply for one of the positions, then you agree that you will be seconded to the other organisations during your contract as follows:

ESR15 secondments:

1. Universidad de Las Palmas de Gran Canaria (ULPGC; Spain): months 14-15.
2. Universty of Tor Vergata (UTV; Rome, Italy) month 20-21.

D) thesis defence.

4. SUBMISSION OF APPLICATIONS

How to apply

Applications will be sent, along with the requested documentation, to candidaturas.bolsas@ipma.pt and pedro.pousao@ipma.pt or to narcisa@ipma.pt or to lribeiro@ipma.pt (see <https://www.ipma.pt/>; <http://www.eracareers.pt/>), clearly specifying in the Object of the email the ESR position to which he/she is interested.

All *BioMedAgu* institutions value diversity and are committed to gender equality of opportunity.

Application process

Career stage: *Early stage researcher or 0-4 years (Post graduate)*

The application must include:

- 1) signed, detailed, CV possibly in europass format¹;
- 2) a cover letter detailing candidate's suitability for the position including an outline of professional and research experiences and research interests;
- 3) at least 2 signed letter of references OR names, affiliations and contacts of two referees supporting your application;
- 4) certificated copy of the of the last (highest) University degree diploma with a letter from the issued university certifying that this diploma is sufficient in their country to apply for the PhD program;
- 5) certificated copy of the academic transcript with marks;
- 6) declaration of the English language knowledge or corresponding certification;
- 7) copy of a valid Identity Document;
- 8) other documents/titles deemed useful for the application.

Each single attachment has to be attached in .pdf format.

The applicant may apply for one or more research project, sending one application for each selected project.

If an applicant desires to replace her/his application for one same position due to e.g. mistake in the information provided or documentation included, he/she can do it BUT only the most recent submission before the deadline will be considered.

IPMA accepts no responsibility for incorrect contact details or documents corrupted or unreadable.

Eligibility

5. ADMISSION REQUIREMENTS II

Requirement 1 (early-stage researchers): Applicants must, at the date of recruitment by *BioMedAqu*, be in the first four years (full-time equivalent research experience measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate) of their research careers and have not been awarded a doctoral degree.

Requirement 2 (mobility rule): Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting institution for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

Requirement 3 (specialisation): Candidates should have a master level degree or equivalent in life sciences, biological sciences, aquaculture, nutrition, compared anatomy or similar. Experience in the RESEARCH scope of *BioMedAqu* is a vital asset: in particular, the candidates should have a keen interest or some experience in fish nutrition, specially dietary lipids and lipophilic vitamins, on molecular tools, on lipid metabolism and fish development, especially on skeletal and muscular systems.

Requirement 4 (English): Proficiency in English is essential, as it is the working language of the

¹ <https://europass.cedefop.europa.eu/en/documents/curriculum-vitae>

BioMedAQU network.

Selection process

The selection process is carried out according to the principles stated in the European Charter for Researchers and the Code of Conduct for Recruitment of Researchers (<https://euraxess.ec.europa.eu/jobs/charter/european-charter>).

6. JURI MEMBERS

The selection process of the ESR will be conducted by a committee composed by Dr. Pedro Pousão (IPMA), by Dr. Narcisa Bandarra (IPMA), and Dr. Laura Ribeiro (IPMA) having as substitutes alternatively by Dr. Cátia Marques (IPMA) or Dr. Carlos Cardoso (CCMAR).

7. SELECTION AND METHODS CRITERIA

The selection of Early Stage Researchers will be managed through the following steps:

1. Candidates apply for a position by mail, as above reported (*see **How to apply section***). The candidate submits an evidence-based CV preferably using the Europass template. The *BioMedAQU* Scientist-in-charge for ESR 15 and the Recruitment Committee provide a first screen of the written applications to check eligibility of the candidate. Adaptability to the position (specialization) will be evaluated based on the experience/ knowledge of the candidate on the following areas: 1 - marine fish nutrition; 2 - biochemistry; 3- lipidomics; 4- molecular biology; 5- histology (organogenesis skeletal & muscle). If candidate covers all the 5 areas of the position and at least 3 years of experience (20 points); if candidate covers at least 4 areas of the position and at least 3 years of experience (16 points); if candidate covers at least 3 areas of the position and at least 2 years of experience (12 points); if candidate covers only 2 areas of the position and at least 2 years of experience (10 points). In addition experience on preparing reports, manuscripts and data dissemination will also be considered: Very good (20 points), when candidate has at least 2 report, 2 manuscript and 2 abstract in international congress/ seminars; Good (15 points) when candidate has at least 2 report and 2 abstract in international congress/ seminars; Sufficient (10 points) when candidate has at least 1 report and 2 abstract in international congress/ seminars. The weight of knowledge areas and reporting will be 60% and 40%, respectively, for the final score of stage 1. Subsequently, at least 5 candidates will be selected for further interviews in stage 2;
2. The candidate engages in a Skype interview with the IPMA Recruitment Committee; at least 5 candidates for position will be interviewed by Skype. Interview will focused on topics related with previous working experience and the ERS15 research area, to evaluate motivation, attitude, perseverance, critical thinking and communication skills. Each aspect will be scored from 20, 15 and 10, respectively for, Very good, Good and Sufficient. The Interview score will be calculated as the average.

Final score of both stages will be calculated as 60% stage1 (specialization) + 40% stage 2 (interview).
3. The IPMA Recruitment Committee makes the final decision about hiring the candidate for

the position and communicates its decision to candidates.

8. COMMUNICATION OF RESULTS

Upon approval of the ranked list by the Director Council of IPMA, I.P., the evaluation process is considered closed, and the candidates will be notified within 5 working days, and hearing process will be conducted, under the terms of the article 16 of the Regulation for Scientific Research Fellowships of IPMA, I.P.

9. RESEARCH FELLOWSHIP CONTEST APPROVAL

Upon conclusion of the hearing process and its appreciation by the jury members, the final decision will be proposed for approval by the IPMA's Board Directory.

Residence permits and other obligations

- Citizens of countries outside EU/EEA will need to apply for a right to residence as a researcher (and may need a VISA) before coming to Portugal².
- Citizens of EU/EEA countries do not need a residence permit or visa, but regardless of their nationality, everybody has to register at the local register office and apply for the personal ID code.

Once the Early Stage Researcher will be in Portugal:

- Registration at the Health National System (SNS) for health coverage³.
- Registration at the SS (Segurança Social) for the individual retirement account.

10. VALUE OF MONTHLY MAINTENANCE ALLOWANCE

Remuneration

The duration of the fellowship will be 3 years, renewed every year. The monthly remuneration is 3371 € per Early Stage Researcher. This amount includes living allowance (salary, social security contributions, taxes and other costs included in the remuneration) and mobility allowance. IPMA will pay accident and health insurance. The remuneration will be supplemented with a Family³ allowance, for those researchers that have a family status and rights, corresponding to 500 € per month per Early Stage Researcher. The Family allowance will be remunerated regardless of whether the family will move with the researcher or not.

The final amount will not change in case of secondments to another organisation. The contracts

² For more info: <https://www.sef.pt/pt/Pages/homepage.aspx>

³ <https://servicos.min-saude.pt/utente/Info/SNS/Foreigners>

⁴ A family allowance will be paid in case the researcher has family obligations. In this context, family is defined as persons linked to the researcher (i) by marriage, or (ii) a relationship with equivalent status to a marriage recognized by the legislation of the country where this relationship was formalized; or (iii) as dependent children who are actually being maintained by the researcher. The family status of a researcher will not be revised during the lifetime of the action.

include social security coverage providing at least sickness and parental benefits, invalidity and accidents at work and occupational diseases, covering the researcher in every place of implementation of *BioMedAqu* activities. As these will be paid by the employer and depend on country-specific regulations, the final net salary that each ESR will receive may differ. In the case of secondments to other beneficiaries or partner organisations, the social security provision will also cover the researchers during these periods.

11. SUPERVISION AND WORKPLACE

The work to be developed will take place in IPMA's Aquaculture Research Facility (Olhão, Portugal), under the scientific supervision of the Senior Researchers Narcisa Bandarra, Pedro Pousão and Laura Ribeiro.

12. PORTUGUESE LEGISLATION AND REGULATION APPLICABLE

- Regulation for Scientific Research Fellowships of IPMA, I.P., approved by FCT, I. P. a 16 August 2017;
- Statute of the Scholarships for Scientific Research, approved by Law No. 40/2004 of 18 August, as amended by Law No. 202/2012 of 27 August, Law No. 12/2013 of 29 January, Decree-Law No. 89/2013, of 9 July, and Decree-Law No. 233/2013 of 29 October;
- Grants Regulation of the FCT, I. P., approved by Regulation No 234/2012 of 25 June, amended and republished by Regulation No 326/2013 of 27 August and amended by Regulation No 339/2015, 17 June;
- Administrative Procedure Code, approved by Decree-Law No. 4/2015, 7 January.

Further information

The EURAXESS website (<https://euraxess.ec.europa.eu>) may provide useful information (e.g., visa). More information about Marie Skłodowska-Curie actions can be found <https://euraxess.ec.europa.eu/jobs/310503>. For other questions, you can contact Dr Marc Muller (m.muller@uliege.be).