



UAlg

UNIVERSIDADE DO ALGARVE

**15 Early Stage Researcher (PhD positions) in the *BioMedAQU* project:
Aquaculture meets Biomedicine: Innovation in Skeletal Health
research.: *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)**

Call for 2 ESRs (PhD positions) at University of Algarve

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.

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, 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.

Number of ESR positions available: 15

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

Research Profiles: *First Stage Researcher (R1)*

Application period: *June-October 2018 (please refer to specific position for details)*

Starting date: *September-January 2018 (please refer to specific position for details)*

Project job description

MAIN ACTIVITIES/RESPONSIBILITIES:
<ul style="list-style-type: none"> • 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 <i>BioMedaqu</i> 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 <i>BioMedaqu</i> 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 <i>BioMedaqu</i> project training workshops and events.
PLANNING AND ORGANISING:
<ul style="list-style-type: none"> • 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.

<ul style="list-style-type: none"> Actively contribute to organisation of outreach activities and events.
RESOURCE MANAGEMENT RESPONSIBILITIES: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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.

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

All the open positions of the project

1	Université de Liège , Belgium - Dr Marc Muller. ESR1 will develop a software tool able to automatically identify and locate skeletal elements in a variety of images, to perform morphometric measurements, classify skeletal malformations, and disseminate within the consortium and to wider audience within a web-based environment. For further information contact: Dr Marc Muller (m.muller@uliege.be).
2	Université de Liège , Belgium - Dr Marc Muller ESR2 will obtain zebrafish lines mutated in specific genes involved in human osteoarthritis and study the function of these genes in bone development. Gene function will also be assessed in cell culture and their expression pattern investigated in aquaculture species. For further information contact: Dr Marc Muller (m.muller@uliege.be).
3	INSERM-Université Paris Diderot , France – Prof Martine Cohen-Solal ESR3 will combine generation of mutant zebrafish lines with studies in human cell lines to investigate the function of specific genes. For further information contact: Prof Martine Cohen-Solal (martine.cohen-solal@inserm.fr).
4	Università degli Studi di Roma Tor Vergata , Italy – Dr. Clara Boglione

	ESR4 will focus on the description of morphological, histological and biomolecular descriptors/markers of anomalous skeletogenesis. For further information contact: Dr. Clara Boglione (boglione@uniroma2.it).
5	Università degli Studi di Roma Tor Vergata, Italy - Dr Clara Boglione ESR5 will study how the behavioural dynamics modulate skeletal anomaly's onset and repair. For further information contact: Dr. Clara Boglione (boglione@uniroma2.it).
6	Universidad De Las Palmas De Gran Canaria, Spain – Prof Marisol Izquierdo. ESR6 will determine the effect of plant ingredients on skeleton macro- and micro-morphology by following molecular and practical morphological indicators For further information contact: Prof Marisol Izquierdo (marisol.izquierdo@ulpgc.es).
7	Universidad De Las Palmas De Gran Canaria, Spain – Prof Marisol Izquierdo. ESR7 will perform economic evaluation of the burden of bone anomalies in European fish farms considering the incidence rates by country, species, type of farm, etc., evaluate the risk and prediction of skeleton anomalies as well as the effect of preventive measures developed when applied by fish farmers. For further information contact: Prof Marisol Izquierdo (marisol.izquierdo@ulpgc.es).
8	Universidad De Las Palmas De Gran Canaria, Spain – Prof Marisol Izquierdo. ESR8 will characterize the effects of vitamins K and D effects on Ca metabolism and skeletal health of marine fish larvae, model fish and on bone-derived cells, with the aim to define adequate levels of these vitamins for preservation of skeletal health. For further information contact: Prof Marisol Izquierdo (marisol.izquierdo@ulpgc.es).
9	Universidade do Algarve, Portugal - Prof Leonor Cancela. ESR9 will study the mineralogenic effects of compounds extracted from marine organisms on bone cell cultures, model and aquaculture fish, to discover positive effects on bone formation and regeneration. For further information contact: Prof L Cancela (lcancela@ualg.pt), Prof P Gavaia (pgavaia@ualg.pt).
10	Università Politecnica delle Marche, Ancona, Italy – Prof Oliana Carnevali. ESR10 will study the effects of micronutrients extracted from Lactobacillus on osteoblastic and chondroblastic skeletal cells, on zebrafish cell cultures and on aquaculture species, to discover positive effects on bone formation and regeneration. For further information contact: Prof O Carnevali (o.carnevali@univpm.it).
11	Universiteit Gent, Belgium – Prof Eckhard Witten. ESR11 will focus on the study of vertebral fusion defects in developing salmon, in order to better understand the fusion process also in other species and to formulate recommendations to reduce their incidence. For further information contact: Prof E Witten (PEckhardWitten@aol.com).
12	Universiteit Gent, Belgium – Prof Eckhard Witten. ESR12 will focus on the effects of phosphate deficiency or oversupply on skeletal malformations, with focus on vertebral column malformations, to define optimal conditions for skeletal health. For further information contact: Prof E Witten (PEckhardWitten@aol.com).
13	Universidade do Algarve, Portugal - Prof Leonor Cancela, Prof Paulo Gavaia. ESR13 will determine the effect of the balance in antioxidant and pro-oxidant nutrients in bone mineralization and remodelling to better understand the role of reactive oxygen species on bone formation and remodelling. For further information contact: Prof L Cancela (lcancela@ualg.pt), Prof P Gavaia (pgavaia@ualg.pt).
14	Westfaelische Wilhelms-Universitaet Muenster, Germany – Prof Stefan Schulte-Merker. ESR14 will aim at in depth understanding of the molecular and cellular events during spine repair in larval zebrafish based on 4D description of the cellular process leading to repair and based on molecular analysis of the expression profile of these cells. For further information contact: Prof S Schulte-Merker (Stefan.Schulte-Merker@ukmuenster.de).
15	Instituto Português do Mar e da Atmosfera, Faro, Portugal – Dr Pedro Pousão.

ESR15 will study 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 aquaculture will be issued. For further information contact: Dr P Pousao (pedro.pousao@ipma.pt).



Positions available at University of Algarve

Summary

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>Two 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>ESR9: Effects of marine derive extracts on mineralogenesis – The work will focus on the study the mineralogenic effects of compounds extracted from marine organisms on bone cell cultures, model and aquaculture fish, to discover positive effects on bone formation and regeneration.</p> <p>ESR13: Effects of anti- and pro-oxidants in bone mineralization- The workplan will focus on determining the effects of the balance in antioxidant and pro-oxidant nutrients in bone mineralization and remodelling to better understanding the role of reactive oxygen species on bone formation and remodelling.</p> <p>Main activities/responsibilities:</p> <ul style="list-style-type: none">• 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 studies at the University of Algarve (hereafter **UALG**). The enrolment procedure may require additional documents in paper.

Research Profiles: First Stage Researcher (R1)

Application period: 17 October - 31 October 2018

- **01 – 05 November 2018:** Evaluation of application documents.

- **06 November 2018:** Communication list preselected candidates for personal interviews.
- **07-10 November 2018:** Skype interviews.
- **15-30 November 2018:** Hiring of selected *BioMedAqu* ESRs 9 and 13.
- **Starting date:** January 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 *BioMedAqu*, 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:

ESR : 9 Instituto Português do Mar e da Atmosfera, I.P. (IPMA; Portugal): months 6-9.
 Universty of Tor Vergata (UTV; Rome, Italy) month 16-18.

ESR :13 Universidad de Las Palmas de Gran Canaria (ULPGC; Spain): months M7-M9, M18-M20, M29-M31.
 Westfaelische Wilhelms-Universitaet Muenster (WWU) M10-M11, M21.

D) thesis defence.

How to apply

Applications will be sent, along with the requested documentation, to lcancela@ualg.pt ; m.muller@uliege.be and to pgavaia@ualg.pt (see <https://euraxess.ec.europa.eu/jobs/310503>), clearly specifying in the Subject of the email the ESR position to which he/she is interested.

All *BioMedAqu* 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;

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

- 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;
- 5) certificated copy of the academic transcript;
- 6) declaration of the English language knowledge;
- 7) copy of a valid Identity Document (passport or National ID for EU applicants);
- 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 projects, 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.

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

Eligibility

Requested profiles: The applicants to ESR 9 and ESR 13 should have a background in biological sciences, preferentially with previous experience in working with fishes, either in laboratory or aquaculture conditions, and training in laboratorial techniques: molecular biology (PCR, cloning, microinjection) and histology (Tissue processing, immunochemistry).

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, biomedical sciences, marine biology, 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 skeletal anomalies (in fish), histology, skeletal and muscular development, cell culture, molecular and cell biology.

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

The selection process of the ESRs will be conducted by a committee composed by Dr. Leonor Cancela (UALG), Dr. Paulo Gavaia (UALG) and Dr. Laura Ribeiro (IPMA) or alternatively by Dr. Pedro Pousão (IPMA) or Dr. Vincent Laizé (CCMAR).

The selection of 2 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 9 and ESR 13 and the Recruitment Committee provide a first screen of the written applications to check eligibility of the candidate. Subsequently, at least 3 candidates for position will be selected for further interviews in stage 2;
2. The candidate will engage in a Skype interview with the UALG Recruitment Committee; at least 3 candidates for position will be interviewed by Skype;
3. The UALG Recruitment Committee makes the final decision about hiring the candidate for the position and communicate the decision to candidates by email.

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 Faro:

- Registration at the local health Office for health coverage.
- Registration at the separate Management of the INPS (National Social Security Institute) for the individual retirement account.

Contract remuneration

The maximum duration of the contract will be 3 years, with a first contract of 18 months renewable for another equal period. The monthly remuneration is € 1636.83/gross month per Early Stage Researcher. To this amount is added a lunch subsidy (€ 4.77 / day) and mobility allowance (€ 600.00) UALG 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 € 250/gross 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 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

² For more info:

<http://www.imigrante.pt/PagesEN/DocumentosNecessarios/ConcessaoAR/09Art91.aspx>
<https://www.ualg.pt/en/content/legal-procedures-0>

³ 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 recognised by the legislation of the country where this relationship was formalised; 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.

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.

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).