

## CV OF THE EXPERIENCED RESEARCHER

### PERSONAL INFORMATION

Family name, First name: Fatsini, Elvira

ORCID ID: 0000-0003-0371-5290

Ciência ID: EA1D-0571-7A6D

Date of birth: 17/07/1984

Nationality: Spanish

h-index: 5; Total citations: 91

Google Scholar profile:

<https://scholar.google.es/citations?hl=en&pli=1&user=55mbsZIAAAAJ>



### RESEARCH EXPERIENCE:

My scientific career started in 2005 when I was entered in the group of Pathology and Histopathology of marine species belonging to Department of Biology of the University of Cádiz (Spain) as a volunteer student. Prof. Maria Luisa de Canales supervised my training for 9 months. The main objective was the study of the different diseases present in seabream and seabass juveniles under captive conditions using several histological procedures. In the same year, I had the opportunity to continue my research training at the Institute of Research and Technology Food and Agriculture (IRTA, Spain) at the Department of Aquatic Pathology supervised by Dr. Ana Roque for 3 months. In this case, I learnt microbiology and bacteriology techniques working with different mollusc species. In 2008, I repeated the experience in IRTA supervised by Dr. Ana Roque for 3 months but in this case, I was focussed in molecular biology of bacteria. In 2010, I was able to carry out my **Master project** on the detection and characterization of *Vibrio parahaemolyticus* in mollusc of two Ebro delta bays production: Alfacs and Fangar. This was my first contact with high-level research, and it represented the starting point of my career in aquaculture research. Later, in 2012, I was awarded a prestigious **Predoctoral Fellowship** (INIA) from the Spanish Government to complete my PhD in **Fish reproductive behaviour and chemical communication** always focused in aquaculture production at the Institute of Research and Technology Food and Agriculture (IRTA, Spain) where I worked under the supervision of Dr. Neil John Duncan (2012 - 2016). I completed my doctorate at the Polytechnic University of Valencia in April 2017. My PhD research dedicated in the study of reproductive behaviour, chemical communication and dominance behaviour in high-value fish, such as Senegalese sole, mainly characterising the different behavioural aspects associated with spawning period and the implication of urine during this reproductive phase. I also provide the importance of the behavioural studies, such dominance, stress coping style (individual and group) to try to improve the production systems in aquaculture. Moreover, I had the opportunity to benefit from several stays during my PhD in prestigious Research centres to acquire better knowledge in molecular biology and chemical communication in fish. I was awarded the Postdoctoral Fellowship associated with the Project “REPROF1 - *Condicionamento de indivíduos F1 de linguado Senegalês com perspetivas à reprodução em cativo*”, funded by Mar2020 Program (Direção Regional de Agricultura e Pescas do Algarve) under Dr Elsa Cabrita supervision where I am performing several activities (conditioning, chemical communication and genomics) related to Senegalese sole reproduction. Recently, I have been awarded the Postdoctoral Fellowship related to the Project “EBB - *European Marine Biological Resource Centre Biobank*” where I am going to perform cryobiology methods in several fish species to preserve biological material. Recently, I have been awarded the **Junior Researcher** position under the project “*Mitigation solutions for the reproductive disorder of Senegalese sole cultivation (MITIGASOLE)*” to be conducted in the Centre of Marine Sciences (CCMAR) funded by FCT (Portugal).

## ACADEMIC BACKGROUND

11/04/2017	<b>PhD <i>Cum Laude</i></b> in Animal Production Science Polytechnic University of Valencia, Valencia, Spain
13/10/2009 – 24/12/2010	<b>Master's degree</b> in Aquaculture University of Valencia and Polytechnic University of Valencia, Valencia, Spain (Top 10 % student)
01/09/2002 – 09/09/2008	<b>Bachelor's degree</b> in Marine Sciences (Average 1.6) University of Cádiz, Cádiz, Spain.

## RESEARCH BACKGROUND (S)

16/04/2021- *present position* Junior Researcher **FCT Stimulus of Scientific Employment, Individual Support** (“MITIGASOLE” - Mitigation solutions for the reproductive disorder of Senegalese sole cultivation) Reproduction Biotechnology, Centre of Marine Sciences (CCMAR), Faro, Portugal.

15/02/2020 – 31/03/2021 Post-Doctoral **Interreg Espaço Atlântico fellow** (“EBB”- European Marine Biological Resource Centre Biobank) Reproduction Biotechnology, University of Algarve, Faro, Portugal.

15/02/2018 – 14/02/2020 Post-Doctoral **MAR2020 fellow** (16-02-01-FMP-0059 – “REPROF1”) Reproduction Biotechnology, University of Algarve, Faro, Portugal.

## PREVIOUS POSITION (S)

02/11/2012 – 11/04/2017	<b>PhD student.</b> Department of Fish Reproduction and Culture, Institute of Research and Technology Food and Agriculture (IRTA), Tarragona, Spain. Supervisor: Dr. Neil John Duncan Tutor: Dr. Luz Pérez (Polytechnic University of Valencia, Spain). Topic: Reproduction, olfaction and dominance behaviour in Senegalese sole ( <i>Solea senegalensis</i> ).
01/06/2010 – 01/11/2010	<b>Master's candidate.</b> Aquatic Pathology Department, Institute of Research and Technology Food and Agriculture (IRTA), Tarragona, Spain. Supervisor: Dr. Ana Roque. Topic: detection and characterization of <i>Vibrio parahaemolyticus</i> in mollusc of two Ebro delta bays production
01/01/2006 – 01/01/2007	<b>Student intern.</b> Department of Biology, Faculty of Marine and Environmental Sciences, University of Cádiz, Cádiz, Spain. Supervisor: Prof Maria Luisa de Canales. Topic: Histopathological study of seabream ( <i>Sparus aurata</i> ) and seabass ( <i>Dicentrarchus labrax</i> ).

## INTERNATIONAL PEER-REVIEWED PUBLICATIONS

1. **Fatsini, E.**, Tarasco, M., Almeida, M., Félix, F., Cabrita, E. “New marking and identification method in Senegalese sole (*Solea senegalensis*) focus on behavioural trials validated with a novel ImageJ macro MarkerProfiler”. BEHAVIOR RESEARCH METHODS (*Under revision*).

2. Roque, A., Hernández, M. D., Gras, N., Rey, S., **Fatsini, E.**, Pallisera, J., Duncan, N. J., Muñoz, I., Velarde, A. “The feasibility of using gas mixture to stun seabream (*Sparus aurata*) before slaughtering in aquaculture production”. AQUACULTURE JOURNAL (*Under revision*).

3. **Fatsini, E.**, Oliveira, C. V., Fernández, I., Anjos, C., Chauvigné, F., Cerdà, J., Mjelle, R., Fernandes, J., Cabrita, E. **2020**. “Kisspeptin influences the reproductive axis and circulating levels of microRNAs in Senegalese sole”. *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES* 21, 9051. (doi:10.3390/ijms21239051). IF(5Y) = 4.653.
4. Ibarra-Zatarain, Z., Martin, I., Rasines, I., **Fatsini, E.**, Rey, S., Chereguini, O., Duncan, N. J. **2020**. “Exploring the relationship between stress coping styles and sex, origin and reproductive success, in Senegalese sole (*Solea senegalensis*) breeders in captivity”. *PHYSIOLOGY & BEHAVIOR* 220, 112868. (https://doi.org/10.1016/j.physbeh.2020.112868). IF(5Y) = 2.848.
5. Ibarra-Zatarain, Z., Rey, S., Boglino, A., **Fatsini, E.**, Duncan, N. J. **2020**. “Senegalese sole (*Solea senegalensis*) coping styles are consistent over time: behavioural and physiological responses during ontogenesis”. *PHYSIOLOGY & BEHAVIOR* 217, 112803. (doi: 10.1016/j.physbeh.2020.112803). IF(5Y) = 2.848. **(1 citation)**
6. **Fatsini, E.**, González, W., Ibarra-Zatarain, Z., Napuchi, J., Duncan, N. J. **2020**. “The presence of wild Senegalese sole breeders improves courtship and reproductive success in cultured conspecifics”. *AQUACULTURE JOURNAL* 519, 734922. (doi: 10.1016/j.aquaculture.2020.734922). IF(5Y) = 3.256 **(4 citations)**
7. **Fatsini, E.**, Rey, S., Ibarra-Zatarain, Z., Boltaña, S., Mackenzie, S., Duncan, N. J. **2020**. “Linking stress coping styles with brain mRNA abundance of selected transcripts for Senegalese sole (*Solea senegalensis*) juveniles”. *PHYSIOLOGY & BEHAVIOR* 213, 112724. (doi: 10.1016/j.physbeh.2019.112724). IF(5Y) = 2.848. **(2 citations)**
8. **Fatsini, E.**, Rey, S., Ibarra-Zatarain, Z., Mackenzie, S. and Duncan, N. J. **2017**. “Dominance behaviour in a non-aggressive flatfish, Senegalese sole (*Solea senegalensis*) and brain mRNA abundance in selected transcripts”. *PLOS ONE* 12(9), e0184283. (doi: 10.1371/journal.pone.0184283). IF (5Y) = 3.543 **(10 citations)**.
9. **Fatsini, E.**, Carazo, I., Chauvigné, F., Manchado, M., Cerdà, J., Hubbard, P. C. and Duncan, N. J. **2017**. “Olfactory sensitivity of the marine flatfish *Solea senegalensis* to conspecific body fluids”. *JOURNAL OF EXPERIMENTAL BIOLOGY* 220, 2057-2065 (doi: 10.1242/jeb.150318). IF (5Y) = 3.407 **(8 citations)**.
10. **Fatsini, E.**, Bautista, R., Manchado, M. and Duncan, N. J. **2016**. “Transcriptomic profiles of the upper olfactory rosette in cultured and wild Senegalese sole (*Solea senegalensis*) males”. *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY PART D: GENOMICS AND PROTEOMICS* 20, 125 - 135. (doi: 10.1016/j.cbd.2016.09.001). IF (5Y) = 2.5 **(18 citations)**.
11. Ibarra-Zatarain, Z., **Fatsini, E.**, Rey, S., Chereguini, O., Martin, I., Rasines, I., Alcaraz, C., Duncan, N. **2016**. “Characterization of stress coping style in Senegalese sole (*Solea senegalensis*) juveniles and breeders for aquaculture”. *ROYAL SOCIETY OPEN SCIENCE* 3, 160495 (doi: 10.1098/rsos.160495). IF (5Y) = 2.243 **(17 citations)**.
12. Chauvigné, F., **Fatsini, E.**, Duncan, N., Ollé, J., Zanuy, S., Gomez, A., Cerdà, J. **2016**. “Plasma levels of follicle-stimulating and luteinizing hormones during the reproductive cycle of wild and cultured Senegalese sole (*Solea senegalensis*)”. *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY PART A: MOLECULAR AND INTEGRATIVE PHYSIOLOGY* 191, 35-43 (doi: 10.1016/j.cbpa.2015.09.015). IF (5Y) = 2.234 **(23 citations)**.

### **ORAL PRESENTATIONS**

1. **Fatsini, E.**, Almeida, M., Oliveira, C., Cabrita, E. The use of an environmental enrichment

modulates dominance response in Senegalese sole (*Solea senegalensis*). *Congress of the Portuguese Ethological Society 2020 (SPE2020)*. 6 November 2020 (Online). Faro, Portugal.

2. Oliveira, C., **Fatsini, E.**, Anjos, C., Chauvigné, F., Cerdà, J., Cabrita, E. Effect of kisspeptin treatment on Senegalese sole (*Solea senegalensis*) reproductive axis. *Latin American & Caribbean Aquaculture 2019 (LAQUA 2019)*. 19 – 22 November 2019. San José, Costa Rica.

3. **Fatsini, E.**, Diogo, P., Martins, G., Anjos, C., Gavaia, P. J., Cabrita, E. Social status impacts on sperm competition in fish. *7<sup>th</sup> International Workshop on the Biology of Fish Gametes*. 2 – 6 September 2019. Rennes France.

4. Oliveira, C., **Fatsini, E.**, Cabrita, E. Implementation of guidelines for sustainable aquaculture in Portugal: Serinova and ReproF1 projects. *Workshop in Fish Epigenetics: Current perspectives in Aquaculture*. 9 – 11 January 2019. Storhavet, Tromsø, Norway.

5. González, W. A., **Fatsini, E.**, Ramos, S., Duncan, N. J. La presencia de reproductores salvajes de lenguado senegalés (*Solea senegalensis*, Kaup 1858) aumenta la participación en el cortejo y el éxito reproductivo de los lenguados reproductores de cultivo. *XVI Spanish National Aquaculture Congress 2017*. 3 – 5 October 2017. Zaragoza, Spain.

6. **Fatsini, E.**, Rey, S., Ibarra-Zatarain, Z., MacKenzie, S. Duncan, N. J. Linking social status with brain gene expression in Senegalese sole (*Solea senegalensis*). *Aquaculture Europe 2016*. 20 – 23 September 2016. Edinburgh, Scotland.

7. **Fatsini, E.** Snap Presentation. The enigmatic life of Senegalese sole (*Solea senegalensis*) in captivity. *Aquaculture Europe 2016*. 20 – 23 September 2016. Edinburgh, Scotland.

8. **Fatsini, E.**, Rey, S. Ibarra-Zatarain, Z., Duncan, N. J. Determination of dominance in Senegalese sole (*Solea senegalensis*) related to feeding and territory. *Scottish Conference for Animal Behaviour (SCAB)*. 2 April 2016. Stirling, Scotland.

9. **Fatsini, E.**, Carazo, I., Chauvigné, F., Manchado, M., Cerdà, J., Hubbard, P. C., Duncan, N. J. Olfactory sensitivity of the Senegalese sole (*Solea senegalensis*) to conspecific urine, and its potential role in chemical communication". *Society for Experimental Biology (SEB) annual meeting*. 3 – 7 July 2016. Brighton, United Kingdom.

10. **Fatsini, E.**, Ibarra-Zatarain, Z., Rey, S., Duncan, N. J. Parámetros de dominancia en el lenguado senegalés (*Solea senegalensis*) relacionados con la alimentación y el territorio. *XV Spanish National Aquaculture Congress 2015*. 13 – 16 October 2015. Huelva, Spain.

11. Ibarra-Zatarain, Z., **Fatsini, E.**, Chereguini, O., Rasines, I., Ignacio, M., Rey, S., Duncan, N. J. Study of behavioural profiles in Senegalese sole (*Solea senegalensis*) bloodstock to characterise stress coping styles in relation to reproductive success. *10<sup>th</sup> International Symposium on Reproductive Physiology of fish*. 25 – 30 June 2014. Olhão, Portugal.

12. Duncan, N. J., Ibarra-Zatarain, Z., Vallés, R., **Fatsini, E.** Does the variation in reproductive success of marine fish held in captivity need to be considered when assessing gamete quality? *4<sup>th</sup> International Workshop on the Biology of Fish Gametes*. 17 – 20 September 2013. Albufeira, Portugal.

## **POSTER PRESENTATIONS**

1. **Fatsini, E.**, Oliveira, C., Fernández, I., Marques, C., Mjelle, R., Kopp, M., Fernandes, J., Cabrita, E. Circulating miRNA expression is associated with hormonal kisspeptin treatment on

Senegalese sole (*Solea senegalensis*) breeders. *Latin American & Caribbean Aquaculture 2019 (LAQUA 2019)*. 19 – 22 November 2019. San José, Costa Rica.

2. Ferrão, L., Gallego, V., Morini, M., **Fatsini, E.**, Cabrita, E., Oliveira, C. C. V. Searching for daily rhythms in transcript levels of melatonin receptor *mt2* and other quality parameters in Senegalese sole sperm. *XII Conference of the Iberian association for comparative endocrinology (AIEC 2019)*. 26 – 28 September 2019. Faro, Portugal.

3. Gallego, V., Ferrão, L., **Fatsini, E.**, Morini, M., Frias, P., Cabrita, E., Oliveira, C. Determination of day/night melatonin levels in seminal plasma in relation to sperm quality in Senegalese sole. *7<sup>th</sup> International Workshop on the Biology of Fish Gametes*. 2 – 6 September 2019. Rennes, France.

4. Morini, M., **Fatsini, E.**, Ferrão, L., Gallego, V., Frias, P., Oliveira, C., Cabrita, E. Day and night gene expression of sperm quality markers in Senegalese sole. *7<sup>th</sup> International Workshop on the Biology of Fish Gametes*. 2 – 6 September 2019. Rennes, France.

5. **Fatsini, E.**, Ibarra-Zatarain, Z., Rey, S., MacKenzie, S., Boltaña, S., Duncan, N. J. Stress coping style profiles and brain mRNA expression in Senegalese sole (*Solea senegalensis*) juveniles. *Aquaculture Europe 2017*. 17 – 20 October 2017. Dubrovnik, Croatia.

6. **Fatsini, E.**, Ibarra, Z., Duncan, N. J. Observations of the courtship of mixed wild and captivity breed Senegalese sole (*Solea senegalensis*) broodstock. *10<sup>th</sup> International Symposium on Reproductive Physiology of fish*. 25 – 30 June 2014. Olhão, Portugal.

7. **Fatsini, E.**, Ibarra, Z., Rey-Planellas, S., Duncan, N. J. Dominance in juvenile Senegalese sole (*Solea senegalensis*)". *Scottish Conference for Animal Behaviour (SCAB)*. 29 March 2014. Edinburgh, Scotland.

8. Roque, A., Manchado, M., Hernandez, D., Gines, R., Berbel, M., **Fatsini, E.**, Gairin, I., Duncan, N. J. Stunning of seabream-preliminary results. *UFAW International Animal Welfare Science Symposium*. 4 – 5 July 2013. Barcelona, Spain.

9. **Fatsini, E.**, Ibarra-Zatarain, Z., Duncan, N. J. Análisis Morfológico de las rosetas olfativas (dorsal y ventral) del lenguado senegalés (*Solea senegalensis*). *XIV Spanish National Aquaculture Congress 2013*. 23 – 25 September 2013. Gijón, Spain.

10. Ibarra-Zatarain, Z., **Fatsini, E.**, Rey, S., Cherenguini, O., Rasines, I., Duncan, N. J. Preliminary results on the influence of stress coping styles on spawning success in Senegalese sole (*Solea senegalensis*) broodstock held in captivity. *4<sup>th</sup> International Workshop on the Biology of Fish Gametes*. 17 – 20 September 2013. Albufeira, Portugal.

## **FELLOWSHIPS AND AWARDS**

2021 **Junior Researcher Position** under the project “*Mitigation solutions for the reproductive disorder of Senegalese sole cultivation (MITIGASOLE)*” to be conducted in the Centre of Marine Sciences (CCMAR) funded by FCT **Stimulus of Scientific Employment, Individual Support** (Portugal).

2019 **Seal of Excellence** (European Commission – H2020). The project MITIGASOLE was scored as a High-Quality project proposal in 2018 call in Marie Skłodowska-Curie individual European fellowship.

2019 **STSM- Cost Action “EPITRANS”**. Short stay during post-doctoral fellow to open a new

line in epitranscriptomic in Senegalese sole. Financial support provided by Cost Action EPITRANS. Nord University.

2018 **Post-doctoral Fellowship** (Mar2020 Programme). Financial support provided by Mar2020 Program (Direção Regional de Agricultura e Pescas do Algarve). University of Algarve.

2018 **Seal of Excellence** (European Commission – H2020). The project MITIGASOLE was scored as a High-Quality project proposal in 2017 call in Marie Slodowska-Curie individual European fellowship.

2012 **Predocctoral fellowship** (FPI INIA). Financial support provided by the Spanish Government and the Ministry of Economy and Competitiveness (MINECO).

### **SUPERVISION OF GRADUATE STUDENTS**

1. **Supervisor** of MSc student fellow under “*Laboratory Methods*” proposal for a training period. From 1/01/2021 to 30/05/2021. Maria Mafalda Amaral Fonseca de Almeida. Department of Reproduction Biotechnology, Centre of Marine Science (CCMAR), Faro, Portugal.

2. **Co-supervisor** of a **MSc student** fellow. From 01/10/2019 to 15/12/2020. Tomás Geraldos dos Santos. Department of Reproduction Biotechnology, Centre of Marine Science (CCMAR), Faro, Portugal. Principal Supervisor: Catarina Oliveira.

3. **Supervisor** of a **Bachelor student** fellow. From 01/10/2019 to 14/06/2020. Maria Mafalda Amaral Fonseca de Almeida. Department of Reproduction Biotechnology, Centre of Marine Science (CCMAR), Faro, Portugal. Co-Supervisor: Prof. Elsa Cabrita.

4. **Co-supervisor** of a **Bachelor student** fellow. From 01/03/2018 to 06/09/2018. Gabriel José Patricio Moço. Department of Reproduction Biotechnology, Centre of Marine Science (CCMAR), Faro, Portugal. Co-supervisor: Catarina Oliveira; Principal Supervisor: Prof. Elsa Cabrita.

5. **Co-supervisor** of a **MSc student** fellow. From 01/05/2014 to 01/09/2014. Juvenal Napuchi. Department of Fish Reproduction, Institute of Research and Technology Food and Agriculture (IRTA), Tarragona, Spain. Principal Supervisor: Neil J. Duncan.

### **TEACHING ACTIVITIES**

1. **Seminar for students from Master in Aquaculture and Fisheries in the University of Algarve.** *Behavioural studies with future application in aquaculture.* University of Algarve, Faro, 18 November 2020.

2. **Seminar for students from Master in Aquaculture and Fisheries in the University of Algarve.** *Behavioural studies with future application in aquaculture.* University of Algarve, Faro, 14 October 2019.

3. **Seminar for researchers/members from Nord University in Bodø, Norway.** *Chemical communication and Dominance behaviour in Senegalese sole.* Nord University, Bodø, Norway, 15 February 2019.

4. **Seminar for Laboratory members from Genomic group in Bodø, Norway.** *Preliminary results on the effect of kisspeptin treatment on reproductive performance of Solea senegalensis.* Oliveira, C., **Fatsini, E.**, Cabrita, E. Nord University, Bodø, Norway, 16 January 2019.

**5. Seminar for students from Master in Aquaculture and Fisheries in the University of Algarve.** *The importance of behavioural studies in aquaculture.* University of Algarve, Faro, 15 October 2018.

**6. Seminar for researchers and students from CCMAR.** *The importance of behavioural studies in Senegalese sole (*Solea senegalensis*) cultivation.* Centre of Marine Science (CCMAR). CCMAR, Faro, 21 May 2018.

**7. Seminar for researchers and students from IRTA.** *Genes as “Stress coping” biomarkers of Senegalese sole.* Institute of Research and Technology Food and Agriculture (IRTA). IRTA-SCR, 4 September 2014.

### **PROFESSIONAL TRAINING COURSES**

**1. Participant in the course “Liquid chromatography and mass spectrometry methods in marine sciences”.** Organized by ASSEMBLE + in the Centre of Marine Sciences (CCMAR) 2019. Faro, Portugal (29 – 30 October 2019)

**2. Participant in the course “Introductory bioinformatic course to sequencing data processing”.** Organized by AQUAEXCEL 2020 program in the Institute of Aquaculture in the University of Stirling 2019. Stirling, Scotland (UK) (26 – 30 August 2019).

**3. Participant in the “Course on Animal Experimentation. Category B”.** Organised by CAL-AQUA in Centre of Marine Sciences (CCMAR) 2018. Faro, Portugal (2 – 6 July 2018).

**4. Participant in the “Course on academic research skills”.** Organised by Institute of Research and Technology Food and Agriculture (IRTA) in the Autonomous University of Barcelona, Spain, imparted by Dr. Steve Quarrie (Belgrade University). (20 – 24 July 2015)

**5. Professional activity of sailor on fishing vessels** (Agricultura i Pesca de la Generalitat Valenciana) 2010. Valencia, Spain.

**6. Participant in the course “specialization in Photoshop CS6”** (FPO). Organised by Santillana Formation, S. L. 2007. Cadiz, Spain.

**7. Participant in the course “Advances in genetics and pathology in aquaculture”.** Organised by CSIC and University of Cadiz. 2006. Cadiz, Spain.

### **NATIONAL COLLABORATIONS**

29/06/2015 - 10/07/2015. **Visiting PhD student**, Spanish National Research Council (CSIC) Barcelona, **Spain**. Supervisors: Dr Joan Cerdà and Dr François Chauvigné. Topic: ELISA development for gonadotropins (Lh and Fsh) in Senegalese sole.

23/02/2015 - 16/03/2015. **Visiting PhD student**, Instituto de Investigación y Formación Agraria y Pesquera (IFAPA-El Toruño) Cádiz, **Spain**. Supervisor: Dr Manuel Manchado. Topic: validation of genes included in RNA-seq performed in the upper olfactory rosette of Senegalese sole.

### **INTERNATIONAL COLLABORATIONS**

05/01/2019 – 06/03/2019 **Short Term Scientific Mission COST ACTION** inside the COST “EPITRANS”. Nord University, **Norway**. Supervisor: **Prof. Jorge Fernandes**. Topic: The

implication of kisspeptin 2 in mRNA modifications (m<sup>6</sup>-methyl-adenosine) in Senegalese sole breeders.

07/02/2016 - 06/04/2016 **Visiting PhD student**, Institute of Aquaculture. University of Stirling. **Scotland**. Supervisor: Prof. Simon Mackenzie. Topic: Characterisation of transcripts related to dominance behaviour in the brain of Senegalese sole juveniles.

07/09/2015 - 07/12/2015 **Visiting PhD student**, Department of electrophysiology, Centro do Ciências do Mar (CCMAR) Faro, **Portugal**. Supervisor: Dr Peter Hubbard. Topic: olfactory sensitivity to different conspecific fluids in Senegalese sole using electro-olfactogram.

07/01/2014 - 02/04/2014 **Visiting PhD student**, Institute of Aquaculture. University of Stirling. **Scotland**. Supervisor: Prof. Simon Mackenzie. Topic: Characterisation of transcripts associated with stress coping styles in Senegalese sole juveniles.

15/03/2013 - 15/04/2013 **Visiting PhD student**, Institute of Aquaculture. University of Stirling. **Scotland**. Supervisor: Prof. Simon Mackenzie. Topic: RNA extraction from different tissues (liver, brain and olfactory rosettes) of Senegalese sole.

### **PARTICIPATION IN RESEARCH PROJECTS (Role as a Team member)**

1. Improvement of sperm quality indicators in spotted wolffish (*Anarhichas minor*) (2020 – 2022), **EEA Grant (Bilateral Action Funds)**. Principal investigator: Elvira Fatsini Fernández. Total funding: €10,768.

2. Identification of broodstock performance indicators and markers to boost the aquaculture of emerging fish species (BESTBROOD) (2020-2023). **ERA-NET BlueBio** (European commission). Principal investigator: José Beirão (Nord University, Norway). CCMAR is subcontracted by the consortium. Total funding €1,342,971.

3. Asociación de la comunicación química y el estatus social en el linguado senegalés según las condiciones de cultivo para la producción de reproductores (CONDISOLE). (2019 - 2020) Campus de Excelencia Internacional del Mar (**CeiMar**). Principal investigator: Elvira Fatsini Fernández. Total funding: €4,000.

6. Unrevealing the ecological impacts of nanoparticles toxicity in the reproduction of marine organisms (NANOREPROTOX) (2018 – 2021). **FCT**, Portugal. Principal investigator: University of Aveiro (Claudia Mieiro) and Center of Marine Science (Elsa Cabrita).

7. Condicionamento de indivíduos F1 de linguado Senegalês com perspectivas à reprodução em cativeiro (ref. 16-02-01-FMP-0059) (2017 – 2020) REPROF1. **Programa MAR2020**, Direção Geral das Pescas e Agricultura. Principal investigator: Prof. Elsa Cabrita. Total funding: €273,493.96.

8. Bases para a implementação de uma nova espécie na aquacultura em Portugal (ref: 16-02-01-FMP-0064) (2017 - 2020) SERINOVA. **Programa MAR2020**, Direção Geral das Pescas e Agricultura. Principal investigator: Prof. Elsa Cabrita. Total funding: €400,493.96.

9. EBB-European Marine Biological Resource Centre Biobank (2017 - 2021) (EAPA\_501/2016. Programa Interreg Atlantic area (UALG (Portugal), CIIMAR (Portugal), UPV/EHU (Spain), UVIGO (Spain), FF (Spain), NUIG (Ireland), UPMC (France), SAMS (UK), IMR (Norway), MBA (UK), UGent (Belgium). Principal investigator (UALG): Prof. Elsa Cabrita. Total funding (UALG): €136,685.40.



10. Broodstock management based on behaviour to increase the production of gametes and reproductive output in cultured and wild Senegalese sole (*Solea senegalensis*). Gestión de los reproductores basada en su comportamiento para aumentar la producción de gametos y el éxito reproductivo en el lenguado senegalés (*Solea senegalensis*) cultivado (F1) y salvaje (2015 - 2018). Project N°: RTA2014-00048-00-00. **Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA)**, Spain. Principal Investigator: Dr Neil John Duncan. Total funding: €180,000

11. Exploring the biological and socio-economic potential of new/emerging candidate fish species for the expansion of the European aquaculture industry (DIVERSIFY) (2013 - 2018). Grant agreement no: 603121. **European Union**. Reproduction and Genetics work package leader: Dr Neil John Duncan. PROJECT COORDINATOR: Dr Constantinos Mylonas (HCMR) Dr Alicia Estévez (IRTA). Total funding: €739,717.30

12. Caracterización de los perfiles de comportamiento (estilos de afrontamiento al estrés) y su impacto en el éxito reproductivo del lenguado senegalés (*Solea senegalensis*) (2011-2015). Project N°: RTA2011-00050-00-00. **Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA)**, Spain. Principal Investigator: Dr Neil John Duncan. Total funding: €207,098.40

13. DATAQUEST: Inventory of data sources relevant for the identification of emerging diseases in the European aquaculture population (2010 - 2011). Project N°: EFSA-Q-2009-00739. **European Food Safety Authority (EFSA)**. Principal Investigator(s): Dr Chris Rodgers (IRTA) Dr Ana Roque (IRTA) Dr Marcos (Marine Laboratory).

14. Improving European mollusc aquaculture: disease detection and management (BIVALIFE) (2007 - 2010). Project N°: THEME [KBBE.2010.1.2-08]. **European Union**. Principal Investigator at IRTA: Dr Noèlia Carrasco. EU Total funding: €2,995,636.

### **RESEARCH PROJECTS WITH PENDING APPROVAL**

1. BREEDFLAT – New approaches on the dietary-effects in broodfish: the role of nutrition on sustainable production of flatfish. EEA Grants call#4 Blue Growth. **European Union**. Partners: ACUINOVA, CIIMAR (Portugal partners); NORD UNIVERSITY, SONG AQUA, AKVA-PLANIVA (Norway partners). Principal investigator at CCMAR: Prof. Elsa Cabrita. EU total funding: €777,000.

2.

### **ADDITIONAL RELEVANT INFORMATION**

2018 Portuguese (speaking and writing).

2014 First Certificate in English (B2). University of Cambridge.

### **RESEARCH TECHNIQUES**

**Animal husbandry:** Larval fish culture and fish rearing; broodstock management.

**Microbiology:** media preparation; growth and maintenance of bacteria.

**Molecular biology:** RNA and DNA extraction; conventional PCR; Real-time quantitative RT-PCR assay.

**Epigenetics:** small non-coding RNA library preparation and sequencing.

**Epitranscriptomics:** RNA methylation using Immunoprecipitation method and sequencing.

**Histology:** all conventional histological procedures and conventional light microscopy.

**Biochemical analysis:** Hormone and steroids measurements (ELISA).

**Electrophysiology:** Electro - olfactogram (EOG) and electro - encephalogram (EEG) in fish.

**Computer assisted analysis and imaging system:** Basic statistical analysis, Olympus Analysis cell and Photoshop CS6; Image analysis specialised in animal behaviour; Cytoscape.