

Romain Fontaine

Born March 16, 1988 - French

Professional address : Norwegian University of Life Sciences, Faculty of Veterinary Medicine

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Profile and Research interests

PhD degree in Neuroscience, with a focus on the neuroendocrine control of reproduction. The overall scope of my research interests encompasses the physiology, genetics and development of aquatic organisms, as well as their interactions with the environment. I am particularly interested in specific features that can be applied to medicine, environment or aquaculture in the long run.

Education

Ph.D. degree

2014

Ph.D. degree in Neurosciences at University Paris Sud, France. Supervised by Dr Catherine Pasqualini at the CNRS of Gif sur Yvette (France). Title of the thesis: The dopamine system inhibiting the gonadotrope function in zebrafish.

Master degrees

2011

- Valedictorian for the Master degree - International program (Université Pierre et Marie Curie, France – Pontificia Universidad Catholica de Chile, Chili – Universitat autonoma de Barcelona, Spain) in Integrative Biology and Physiology of organisms focusing on aquatic organisms.
- Magister degree in Animal production (Facultad Agronomia) from Pontificia Universidad Catholica de Chile in Chili

Bachelor degree

2009

Bachelor in Life Sciences and Technologies at Université Pierre et Marie Curie (Paris VI) in France

Research Experience

Post-doctoral fellow in Neuroendocrinology

2015-NOW

- Development of fluorescent multi-colour *in situ* hybridization technics for receptors and ligands for eel, salmon and medaka
- Development of immuno-fluorescent technic for salmon, eel, European hake and medaka
- Organization and technical support for the medaka fish facility
- Development of a setup to study effects of light and temperature on fish
- Development of a setup to study reproductive behavior in medaka
- Development of slice preparation of brain and pituitary live tissues for electrophysiology

Team leader: Pr Finn-Arne Weltzien

Ph.D. student in Neuroscience

2011-2015

Title of the thesis: The dopamine system inhibiting the gonadotrope function in zebrafish. Supervised by Dr Catherine Pasqualini at the CNRS of Gif sur Yvette (France).

Master 2 Internship

Feb-Jun 2011

Study of dopaminergic inhibitory control on reproduction in zebrafish. Co-supervised by Dr Sylvie Dufour at the MNHN of PARIS (France) and Dr Catherine Pasqualini at the CNRS of Gif sur Yvette (France).

Master 1 Internship

Jan-Feb 2010

Study of effect of UV light on mortality, mobility and metabolism of marine invertebrate larvae. Supervised by Dr Myriam Fernandez at the marine coastal station ECIM of Las Cruces (Chili).

Bachelors Internship

June 2009

Study of the role of one adenylate cyclase in atherosclerosis. Supervised by Dr Isabelle Borde at the university Pierre et Marie Curie (France).

Scientific supervision Experience	Elia Ciani (<i>PhD candidate</i>) 2015-now
	Co-supervising the PhD at Norwegian University of Life Sciences, Oslo – Norway
	Aurora Campo (<i>PhD candidate</i>) 2017
	Training to <i>in situ</i> hybridization and immuno- fluorescent technics in eel. Visiting scientist from Muséum National d'Histoire Naturelle, Paris – France
	Daan Mes (<i>PhD candidate</i>) 2017
	Training to <i>in situ</i> hybridization and immuno- fluorescent technics in salmon. Visiting scientist from Norwegian University of Life Sciences, Oslo – Norway
Michela Candelma (<i>PhD candidate</i>) 2016	
Training to <i>in situ</i> hybridization and immuno- fluorescent technics in European hake and confocal imaging. Visiting scientist from Università Politecnica delle Marche Ancona – Italy	
Maxime MAUHOURLAT (<i>undergraduate student</i>) 2016	
Training to medaka fish facility maintenance and screening of medaka fluorescent Gfp and Rfp transgenic lines. Visiting student from Lycée agricole de Blanquefort, Bordeaux – France	
William Beauval (<i>undergraduate student</i>) 2015	
Training to medaka fish facility maintenance and screening of medaka fluorescent Gfp and Rfp transgenic lines. Visiting student from Lycée agricole de Blanquefort, Bordeaux – France	
Guro Sandvik (<i>Postdoc</i>) 2014	
Training to multi-colour fluorescent <i>in situ</i> hybridization technics in medaka. Visiting scientist from Norwegian University of Life Sciences, Oslo – Norway	
Solal Bloch (<i>Master student</i>) 2013	
Training to neuroanatomy observation, <i>in situ</i> hybridization and immuno- fluorescent technics in zebrafish. Visiting student for an internship, from Université Paris Sud XI, Orsay - France	
Teaching experience	University Paris Sud XI (Orsay, France) 2011-2014
	192 hours of teaching : Seminars and practical works in molecular biology, biochemistry and physiology for first- to fourth-year students.
Technical Skills	Molecular biology; cloning, qPCR, PCR, small-scale PCR, genotyping, development of medaka transgenic lines (designed plasmids, Crispr/Cas9)
	Neuroanatomy/Histological techniques: multi-colour fluorescent <i>in situ</i> hybridization, multi-colour immunofluorescence, whole mount and on sections, tissue transparrisation techniques (IDISCO, CUBIC), tract tracing techniques (antero- and retrograde with Dye injections or crystal implantations)
	Developmental approaches (neuron birthdating study, micro-injections of morpholinos)
	Imaging: macrozoom, confocal microscopy, 3D image reconstruction
	Behavioral studies (various types of social behaviour)
	Electrophysiology: cell culture, brain and pituitary slicing for electrophysiology and basic skills in patch-clamp electrophysiology (Whole cell and cell-attached recordings on cell cultures and slices of tissues)
	Maintenance of aquatic facilities including Medaka
Grants	Laureate of the Ph.D. grant in Neuroscience, Region Ile de France 2011-2014 Laureate of the "Monitorat" (teaching grant from University Paris Sud) 2011 Recipient of travel grants to attend national and international congresses (Region Ile de France) 2012, 2013, 2014 Recipient of scholarship for International program (Region Ile de France), 2010 Laureate of scholarship for International program (University Pierre et Marie Curie), 2010-2011

Other activities Organize and animate public scientific events: fête de la science, Sciences en marches

Languages French (native)/ English (fluent)/ Spanish (fluent)/ Norwegian (A1)

Informatics Graphpad prism, MS Office, Adobe (Photoshop, Dreamweaver, Illustrator), HTML, CSS and PHP languages, Octave

Hobbies Scuba diving, Webmastering, Aquariology, Photography

Publications and presentations

Peer-reviewed scientific publications **Fontaine R**, Hodne K, Weltzien F-A. Healthy Brain-pituitary Slices for Electrophysiological Investigations of Pituitary Cells in Teleost Fish. *Journal of Visualized Experiments* 2018

Ager-Wick E, Hodne K, **Fontaine R**, Von Krogh K, Haug T, Weltzien F-A. Preparation of a High-quality Primary Cell Culture from Fish Pituitaries. *Journal of Visualized Experiments*. 2018. 138.

Xavier AL, **Fontaine R**, Bloch S, Affaticati P, Jenett A, Demarque M, Vernier P, Yamamoto K. Comparative analysis of monoaminergic cerebrospinal fluid-contacting cells in Osteichthyes (bony vertebrates). *J Comp Neurol*. 2017. 525(9) : 2265-2283

Candelma M, **Fontaine R**, Colella S, Santojanni A, Weltzien FA, Carnevali O. Gonadotropin characterization, localization and expression in the European hake (*Merluccius merluccius*). 2017.cpl Reproduction. 153(2) : 123-132.

Yamamoto K, **Fontaine R**, Pasqualini C, Vernier P. Classification of Dopamine Receptor Genes in Vertebrates: Nine Subtypes in Osteichthyes. 2015. *Brain Behav Evol*. 86(3-4)

Fontaine R, Affaticati P, Bureau C, Colin I, Demarque M, Dufour S, Vernier P, Yamamoto K, and Pasqualini C. The dopaminergic neurons controlling anterior pituitary functions: Anatomy and ontogenesis in zebrafish. 2015. *Endocrinology*. 156(8):2934-48

Fontaine R., Affaticati P., Yamamoto K., Jolly C., Bureau C., Baloché S., Gonnet F., Vernier P., Dufour S., and Pasqualini C. Dopamine inhibits reproduction in female zebrafish (*Danio rerio*) via three pituitary D2 receptor subtypes. 2013. *Endocrinology*, 154(2): 807-18

International congress oral presentations **Fontaine R.**, Yamamoto, K., Affaticati, P., Bureau, C., Colin, I., Dufour, S., Vernier, P., and Pasqualini, C., 2014. Origin and development of the dopaminergic neurons innervating the pituitary in zebrafish. 11th Congress on the Biology of Fish in Edinburgh, Scotland.

Fontaine R., Yamamoto, K., Affaticati, P., Bureau, C., Colin, I., Dufour, S., Vernier, P., and Pasqualini, C., 2014. Neuroanatomical and genetic bases for the dopaminergic inhibition of the gonadotrope function in zebrafish. 10th International Symposium on Reproductive Physiology of Fish in Olhao, Portugal.

Posters **Fontaine R.**, Yamamoto, K., Affaticati, P., Bureau, C., Colin, I., Dufour, S., Vernier, P., and Pasqualini, C., 2014. The zebrafish preoptico-hypophyseal dopaminergic neurons: origin and development of the inhibitory pathway controlling the gonadotrope function. 8th International Congress of Neuroendocrinology 2014 in Sydney, Australia.

Fontaine R., Affaticati, P., Yamamoto, K., Vernier, P., Baloché, S., Gonnet, F., Jolly, C., Dufour, S., Pasqualini, C., 2013. Dopamine and zebrafish reproduction. 11e Colloque de la Société des Neurosciences in Lyon, France. P92

Fontaine R., Affaticati, P., Yamamoto, K., Vernier, P., Baloché, S., Gonnet, F., Jolly, C., Dufour, S., Pasqualini, C., 2013. Dopamine and zebrafish reproduction. Day of Ecole Doctorale in Paris, France.

Other communications Ciani E., Fontaine R., Nourizadeh-Lillabadi R., Von Krogh K., Weltzien F.-A. 2016. Study of the regulation of follicle-stimulating hormone (Fsh) expression and its role during puberty in *Salmo salar*. 4th National PhD conference in Neuroscience

Ager-Wick E., Fontaine R., Hodne K., Burow S., Henkel C.V., Haug T.M., Weltzien F.-A. 2016. Characterization of temporal changes of Lh producing cells in female medaka (*Oryzias latipes*). 8th International symposium of fish Endocrinology in Goteborg, Sweden

Ciani E., Fontaine R., Nourizadeh-Lillabadi R., Von Krogh K., Weltzien F.-A. 2016. Study of the regulation of follicle-stimulating hormone (Fsh) expression and its role during puberty in *Salmo salar*. 8th International symposium of fish Endocrinology in Goteborg, Sweden

Burow S., Fontaine R., Hollander L., Shpilman M., Nourizadeh-Lillabadi R., Von Krogh K., Weltzien F.-A., Levavi-Sivan B. 2016. Production and validation of recombinant gonadotropins in medaka (*Oryzias latipes*). 8th International symposium of fish Endocrinology in Goteborg, Sweden

Demarque M., Affaticati P., Yamamoto K., Colin I., **Fontaine R.**, Tine E., Bureau C., Vernier P. 2014. Development and plasticity of the dopaminergic phenotype in zebrafish diencephalic clusters. Optical imaging of brain structure and function on multiple scales In Roscoff, France

Yamamoto K., Affaticati P., **Fontaine R.**, Bureau C., Vernier P., Demarque M., 2013. Characterization of paraventricular monoaminergic cells : evolutionary and developmental perspectives. 11^e Colloque de la société des Neurosciences in Lyon, France. P77

Dufour S., Pasquier J., Lafont A.-G., Maugars G., Morini M., Jolly C., **Fontaine R.**, Rousseau K., Pasqualini C., 2012. Impact of genome duplication on fish neuroendocrine functions. 38^{ème} Colloque de la Société de Neuroendocrinologie in Banyuls Sur Mer, France. P20

References **Dr Finn-Arne Weltzien**

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