

Elisa Thoral

Ecophysiolgist PhD student


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 @ElisaThoral

 PCS1 Diploma (first aid training)

 Motorcycle and driving licence


Current status

2018 – 2021 : **PhD in Ecophysiology – Team Ecophysiology, Behaviour, Conservation**
Thesis directors : Damien Roussel and Loïc Teulier

Title : Plasticity of the aerobic performance and bioenergetics of fish coping variations in environmental parameters.

Studied models : Goldfish (*Carassius auratus*), Rainbow trout (*Oncorhynchus mykiss*), European seabass (*Dicentrarchus labrax*), European sardine (*Sardina pilchardus*)

Academic education

2017 – 2018 : **2nd year of Master of Science Degree « Cardiovascular, Metabolic and Nutritional Regulations » (RCMN) (13/21)**
University Lyon 1

2016 – 2017 : **1st year of Master of Science Degree « Integrative and Physiology Biology » (BIP) (7/30)**
University Lyon 1

2013 – 2016 : **Bachelor of Science Degree in Biology, mention Physiology (25/97)**
University Lyon 1

Research Experiences

Jan. – June 2018 **Internship (2nd year of Master) – LEHNA & Ifremer**
(6 months) : Lyon (69), Palavas-Les-Flots (34)
Tutors : Loïc Teulier (LEHNA) and Claire Saraux (Ifremer)
Subject : Consequences of fasting of the European sardine, *Sardina pilchardus*, according to the seasons.

July 2017 **Internship – Oceanographic campaign PELMED - Ifremer**
(2 weeks) : Sète (34)
Tutor : Claire Saraux
Subject : Assessment of the small pelagic fish resources in Mediterranean Sea.

June 2017 : **Internship – LEHNA & Ifremer**
(2 weeks) : *Palavas-Les-Flots (34)*
Tutor : Loïc Teulier
Subject : Effects of the food size and quantity on the muscular bioenergetics in European sardine, *Sardina pilchardus*.

Janv. - Feb. 2017 : **Internship (1st year of Master) – LEHNA**
(6 weeks) : *Lyon (69)*
Tutor : Loïc Teulier
Subject : Impact of hypo-osmotic water on the mitochondrial respiration of the muscular fibres of zebrafish, *Danio rerio*.

Collaboration & Mobility

Sept. 2020 : **Collaboration with Julie Nati and David McKenzie – UMR MARBEC**
Palavas-Les-Flots, 1 month
Subject : Individual tolerance to hypoxia in the European seabass, *Dicentrarchus labrax*.

Jan. – March 2020 : **Collaboration with Jean-Michel Weber – University of Ottawa**
Ottawa, 2 months
Subject : Consequences of lactate infusion on the glucose metabolism in the rainbow trout, *Oncorhynchus mykiss*..

April 2019 : **Collaboration with Karine Salin – Ifremer, UMR LEMAR**
Brest, 3 weeks
Subject : Impact of acute in vitro variations of temperature and oxygen levels on mitochondrial efficiency in the European seabass, *Dicentrarchus labrax*.

Practical and theoretical skills

Practical skills : **Measurement of the cellular respiration (Respirometers Oroboros®)**
Studied models: Zebrafish (*Danio rerio*); Sardine (*Sardina pilchardus*); Seabream (*Sparus aurata*); Chubs (*Squalius cephalus*)

Measurement of the mitochondrial efficiency to produce ATP (Respirometers Oroboros®)
Studied models: Seabass (*Dicentrarchus labrax*)

Swimming performance and respirometry (Loligo® Systems, PyroScience)
Studied models: Seabream (*Sparus aurata*); Chubs (*Squalius cephalus*); Goldfish (*Carassius auratus*); Rainbow trout (*Oncorhynchus mykiss*)

Surgery - Double cannulation
Studied models: Rainbow trout (*Oncorhynchus mykiss*)

Theoretical skills : **Integrative physiology – Ecophysiology – Cellular and mitochondrial metabolism – Fish physiology and anatomy**

Diploma et qualifications : Project designer animal experimentation level 1
TOEIC (850/990)
C2i Diploma (Computer and Internet Certificate)

Softwares: **Biostatistics :** R
Informatics : MS Office, Inkscape
Metabolism : Oxygen Logger (Pyroscience), DatLab

Publications

In preparation

Elisa Thoral, Elie Farhat, Hang Cheng, Damien Roussel, Jean-Michel Weber, Loïc Teulier. **Long-term exposure to constant and intermittent hypoxia induce different metabolic adjustments depending on the level of integration in goldfish.** *In prep.*

Elisa Thoral, Quentin Queiros, Damien Roussel, Gilbert Dutto, Eric Gasset, David McKenzie, Claire Sarau, Loïc Teulier. **The seasonal-dependent metabolic consequences of fasting in the European sardine *Sardina pilchardus*.** *In prep.*

Elisa Thoral, Quentin Queiros, Damien Roussel, Gilbert Dutto, Eric Gasset, David McKenzie, Caroline Romestaing, Claire Sarau, Loïc Teulier. **Shrinking of fish: a bottom-up evidence from bioenergetics.** *In prep.*

Submitted

Elisa Thoral, Loïc Teulier, Damien Roussel, Christos Chinopoulos, Karine Salin. **Low oxygen levels can help to prevent the detrimental effect of acute warming on mitochondrial efficiency in fish.** *Under review in Biology Letters.*

Published

Loïc Teulier, **Elisa Thoral**, Quentin Queiros, David J. McKenzie, Damien Roussel, Gilbert Dutto, Eric Gasset, Jérôme Bourjea, Claire Sarau (2019) **Muscle bioenergetics of two emblematic Mediterranean fish species: *Sardina pilchardus* and *Sparus aurata*.** *Comparative Biochemistry and Physiology, Part A.* 235: 174-179.

Conferences

Chronic hypoxia acclimation and exercise enhance goldfish swimming performance. [Elisa Thoral](#), Elie Farhat, Hang Cheng, Damien Roussel, Jean-Michel Weber, Loïc Teulier. Symposium of Animal Ecophysiology – 4th Edition, 28-30 October, Rennes, France. **Talk.**

The seasonal-dependent metabolic consequences of fasting in the European Sardine. [Elisa Thoral](#), Quentin Queiros, David J. McKenzie, Damien Roussel, Gilbert Dutto, Eric Gasset, Jean-Hervé Bourdeix, Luisa Metral, Claire Sarau, Loïc Teulier. 20th Congress of the “French Group of Bioenergetic”, 26-29 September, Autrans, France. **Poster.**

Food quality affects muscle bioenergetics of small pelagic fish. [Elisa Thoral](#), Quentin Queiros, Damien Roussel, Gilbert Dutto, Eric Gasset, David J. McKenzie, Caroline Romestaing, Claire Sarau, Loïc Teulier. Annual meeting of the Society for Experimental Biology, 2-5 July, Séville, Spain. **Talk.**

Bioenergetics of two Mediterranean fish species are related to their swimming behaviour. [Loïc Teulier](#), [Elisa Thoral](#), Quentin Queiros, David J. McKenzie, Gilbert Dutto, Eric Gasset, Jérôme Bourjea, Claire Sarau. 56th Congress of the Canadian Society of Zoology, 15-19 May, Winnipeg, Canada. **Talk.**

Bioenergetics flexibility of zebra fish muscle facing environmental constraints: chronic hypoxia vs. ion poor water acclimation. [Loïc Teulier](#), Ludovic Guillard, [Elisa Thoral](#), Laetitia Averty, Angéline Clair, Julie Ulmann, Caroline Romestaing. Satellite symposium of the Canadian Society of Zoology “50 years of Comparative Biochemistry: The legacy of Peter W. Hochachka”, 13-14 May, Winnipeg, Canada. **Poster.**

Courses

- January 2019 (2h) : **Travail de la voix et expression corporelle** – Service Icap
- March 2019 (3h) : **Etre lu : comment assurer la circulation de sa publication sur le web ?** – URFIST
- April 2019 - May 2019 (~15h) : **MOOC Ethique de la Recherche** – FUN
- May 2019 (56h) : **Conception de projets scientifiques utilisant des animaux** – VetAgro Sup
- November 2019 (~5h): **Workplace Hazardous Materials Information System (WHMIS 2015) for laboratory workers** – University of Ottawa
- September 2020 (7h): **Réglementation et éthique appliquées aux animaux utilisés à des fins scientifiques** – Animal Welfare Consulting

Teaching activities

- **Contractual teacher assistant – University Lyon 1** : teaching 64h per year, 2018 - 2021.

1st year :

- 9h : Practical work « Energy Expenditure » - **UE Digestive and Energetic Physiology** (3rd year of BSc).
- 22h30 : Practical work « Lipolysis » - **UE Physiological regulations** (1st year of BSc).
- 12h : Personal and professional project 2 (PPP2) – **UE Transversales** (1st year of BSc)
- 21h : Module BC – **DAEU Option B**

2nd year :

- 45h : Practical work « Lipolysis» - **UE Digestive and Energetic Physiology** (3rd year of BSc).
- 13h30 : Travaux Pratiques « Action Potential and Muscle Contraction» - **UE Animal Physiology** (2nd year of BSc)

- **Supervision : Observatory internship – 2 weeks**

3rd year of BSc, University Lyon 1

Aquired Funds

2018 – 2021 : PhD grants, French Ministry of Higher Education and Research (France)

Jan. – March 2020 : Mobility grant from the France Canada Research Fund: 5000 CAD

Sept. 2019 : Grant from the French Group of Bioenergetic (grants from GDR Photosynthèse, Labex Graal, Journal BBA) for the 20th Congress of the French Group of Bioenergetic, Autrans, 26-29 September 2019

July 2019 : Travel fellowship of the Company of Biologists: 200 £

Travel fellowship of the Society for Experimental Biology: 250 £

April 2019 : Mobility grant from the Research Federation BioEnvis, University of Lyon, France: 300 €

Additional Experiences

President of the Association of the PhD student - Member of the organisation of the Annual EDISS Meeting.
EDISS PhD Student Representative.

Member of the organization of scientific animations of the LEHNA laboratory - Member of the organization of the doctoral students' meeting of the LEHNA laboratory.