



Fidji Berio

- 32 years old
- +33 679 971 358
- <https://fberio.github.io>
- fidji.berio@gmail.com
- French Citizenship

Social Network

- Bluesky
- ResearchGate
- Google Scholar
- Github
- Orcid

Languages

- French ● ● ● ● ●
- English ● ● ● ● ●
- Spanish ● ● ● ● ●

Certifications

- Level 2 FFESSM (Advanced PADI)
- Level 1 Nitrox
- PADI Freediver

Hard Skills

- R programming
- Machine learning
- MicroCT imaging
- Histology
- Functional tests

Research Interests

Evo-Devo – Climate change – Biomechanics – Chondrichthyans

Working Experience

- Jan 2025–
Current **Postdoctoral researcher** University of California San Diego
Projects Fish biomechanics & Skeletal mineralization under climate change
- Nov 2022–Dec 2024 **Postdoctoral researcher** Stockholm University
Projects Fish biomechanics [5–6, 8]
- Sept–Oct 2022 **Guest professor** University of Vienna
Teaching Functional evolution of jaw structures [9]
- 2021–2022 **Science communicator** Futura Sciences
Activities Online writing of popularization articles, interviews
Topics Marine biology, paleontology, paleoanthropology
- 2017 – 2021 **PhD Student** ENS Lyon & Institute of Evolution Sciences of Montpellier
Project Physical and genetic factors impacting development and evolution of elasmobranch odontodes [7, 10–13, 15–18]
Methods microCT imaging, histology, machine learning and geometric morphometrics with R, functional tests on *Scyliorhinus canicula* embryos, comparative anatomy
- 2017 **Master Thesis** Univ. du Québec à Rimouski
Project Regionalisation of the vertebral column in a skate [14]
Methods microCT imaging, clustering with R, Clear & Stain double coloration
- 2016 **Master Thesis** Oceanological Observatory of Banyuls-sur-mer
Project Long-term experiment on growth dynamics of hydrothermal mussels *Bathymodiolus thermophilus* related to hydrothermal fluids dynamics
Methods Sclerochronology, Fast Fourier Transform, Mutvei staining
- 2015 **Bachelor Thesis** Institute for Cognitive and Integrative Neuroscience, Bordeaux
Project Effects of serotonin on aggressiveness of the invasive Louisiana crayfish *Procambarus clarkii*
Methods Video tracking with EthoVision, ethology, functional tests on mature specimens

Education

- 2017 – 2021 **PhD Studies** ENS Lyon & Institute of Evolution Sciences of Montpellier
Evo-devo of chondrichthyans
- 2015 – 2017 **Master Studies (1/31)** European Institute for Marine Studies, Brest
Littoral and Sea Sciences with focus on Marine ecosystems and Polar environments
- 2012 – 2015 **Bachelor Studies (1/60)** Univ. of Bordeaux
Biology of Organisms and Ecosystems
- 2010 – 2012 **Bachelor Studies** Univ. of Montpellier
Hypokhâgne & Khâgne – Literature studies (French and Spanish)

Teaching

- 2022 **To Master & PhD Students** Univ. of Vienna
Functional Evolution of Jaw Structures
- 2019 **To Bachelor Students** Univ. of Montpellier
Integrative Biology of Organisms and Comparative Anatomy
- 2019 **To High School Students** Univ. of Montpellier
Embryo and Evolution
- 2018 **To Bachelor Students** Univ. of Montpellier
Life Cycles – Genetics

Under review

- [1] F. **Berio** and V. Di Santo. “Speed-dependent locomotor patterns during steady swimming in a demersal shark”. In: *Journal of Fish Biology* (Under review 02/2025).
- [2] J. H. Gayford, K. Soares, and F. **Berio**. “Sexual ornamentation and weapons of sexual conflict in cartilaginous fishes”. In: *Reviews in Fish Biology and Fisheries* (Under review 02/2025).
- [3] V. Di Santo, X. Qi, F. **Berio**, A. Albi, and O. Akanyeti. “Inherent instability leads to high costs of hovering in near-neutrally buoyant fishes”. In: *PNAS* (Under review 02/2025).
- [4] S. Z. Marketaki, F. **Berio**, and V. Di Santo. “Compensatory sensory mechanisms in naïve blind cavefish navigating novel environments after lateral line ablation”. In: *Comparative Biochemistry and Physiology Part A* (Under review 02/2025).

Online

- [5] F. A. López-Romero, E. Villalobos-Segura, J. Türtcher, F. **Berio**, S. Stumpf, R. P. Dearden, J. Kriwet, and E. Maldonado. “Evolution of the Batoidea Pectoral Fin Skeleton: Convergence, Modularity, and Integration Driving Disparity Trends”. In: *Evolutionary Ecology* (2025). DOI: [10.1007/s10682-025-10330-x](https://doi.org/10.1007/s10682-025-10330-x).
- [6] M. Ishida, F. **Berio**, V. D. Santo, N. H. Shubin, and F. Iida. “Paleo-inspired robotics as an experimental approach to the history of life”. In: *Science Robotics* 9.95 (2024), eadn1125. DOI: [10.1126/scirobotics.adn1125](https://doi.org/10.1126/scirobotics.adn1125).
- [7] O. J. Atake, F. **Berio**, M. Debais-Thibaud, and B. F. Eames. “Extant cartilaginous fishes share trabecular and areolar mineralization patterns, but not tesserae, and evidence for a paedomorphic chimaera skeleton”. In: *eLife* (2024). DOI: [10.7554/eLife.94900.1](https://doi.org/10.7554/eLife.94900.1).
- [8] F. **Berio**, C. Morerod, X. Qi, and V. Di Santo. “Ontogenetic Plasticity in Shoaling Behavior in a Forage Fish under Warming”. In: *Integrative And Comparative Biology* (2023), pp. 1–12. DOI: [10.1093/icb/icad043](https://doi.org/10.1093/icb/icad043).
- [9] F. **Berio**, A. Éon, R. Charron, E. Meunier, J. Marie, D. Florent, M. Simonet, N. Verschraegen, and N. Hirel. “Husbandry conditions of spotted ratfish (*Hydrolagus colliei*, Chimaeriformes) in aquaria for successful embryonic development and long-term survival of juveniles”. In: *Zoo Biology* 43.2 (2023), pp. 188–198. DOI: [10.1002/zoo.21813](https://doi.org/10.1002/zoo.21813).
- [10] R. Zimm, F. **Berio**, M. Debais-Thibaud, and N. Goudemand. “A shark-inspired general model of tooth morphogenesis unveils developmental asymmetries in phenotype transitions”. In: *PNAS* 120.15 (2023), e2216959120. DOI: [10.1073/pnas.2216959120](https://doi.org/10.1073/pnas.2216959120).
- [11] F. **Berio**, Y. Bayle, S. Agret, D. Baum, and N. Goudemand. “3D models related to the publication: Hide and seek shark teeth in Random Forests: Machine learning applied to *Scyliorhinus canicula*”. In: *MorphoMuseumM* (2020), pp. 3–6. DOI: [10.18563/journal.m3.164](https://doi.org/10.18563/journal.m3.164).
- [12] F. **Berio**, Y. Bayle, D. Baum, N. Goudemand, and M. Debais-Thibaud. “Hide and seek shark teeth in Random Forests: Machine learning applied to *Scyliorhinus canicula*”. In: *PeerJ* 10 (2022), e13575. DOI: [10.7717/peerj.13575](https://doi.org/10.7717/peerj.13575).
- [13] F. A. López-Romero, F. **Berio**, D. Abed-Navandi, and J. Kriwet. “Early shape divergence of developmental trajectories in the jaw of galeomorph sharks”. In: *Frontiers in Zoology* 19 (2022), p. 7. DOI: [10.1186/s12983-022-00452-1](https://doi.org/10.1186/s12983-022-00452-1).
- [14] F. **Berio**, Y. Bayle, C. Riley, O. Larouche, and R. Cloutier. “Phenotypic regionalization of the vertebral column in the thorny skate *Amblyraja radiata*: Stability and variation”. In: *Journal of Anatomy* 240.2 (2021), pp. 253–267. DOI: [10.1111/joa.13551](https://doi.org/10.1111/joa.13551).
- [15] F. **Berio**, M. Broyon, S. Enault, N. Pirot, F. A. López-Romero, and M. Debais-Thibaud. “Diversity and evolution of mineralised skeletal tissues in chondrichthyans”. In: *Frontiers in Ecology and Evolution* 9 (2021), p. 660767. DOI: [10.3389/fevo.2021.660767](https://doi.org/10.3389/fevo.2021.660767).
- [16] F. **Berio**. “Multiscale variation of 3D tooth forms in selachians and developmental and evolutionary inferences: Odyssey of a scyliorhinid tooth”. PhD thesis. Institut de Génomique Fonctionnelle de Lyon and Institut des Sciences de l’Evolution de Montpellier, 2021. URL: <https://theses.hal.science/tel-03279588>.
- [17] F. **Berio**, A. Evin, N. Goudemand, and M. Debais-Thibaud. “The intraspecific diversity of tooth morphology in the large-spotted catshark *Scyliorhinus stellaris*: insights into the ontogenetic cues driving sexual dimorphism”. In: *Journal of Anatomy* 237 (2020), pp. 960–978. DOI: [10.1111/joa.13257](https://doi.org/10.1111/joa.13257).
- [18] F. **Berio** and M. Debais-Thibaud. “Evolutionary developmental genetics of teeth and odontodes in jawed vertebrates: a perspective from the study of elasmobranchs”. In: *Journal of Fish Biology* 98.4 (2019), pp. 906–918. DOI: [10.1111/jfb.14225](https://doi.org/10.1111/jfb.14225).

Conferences

2023	Poster presentation Society for Experimental Biology	United Kingdom
2022	Oral presentation Sharks International	Online Edition
2020	Oral presentation ToScA Global	Online Edition
2019	Oral presentation Comparative Cartilage Biology meeting	France
2018	Poster presentation Evolution	France
2018	Poster presentation EuroEvoDevo	Ireland
2018	Oral presentation Symposium of Morphometry and Evolution of Forms	France

Referees



Valentina Di Santo, Assistant Professor, Scripps Institution of Oceanography
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Mélanie Debiais-Thibaud, Professor, Université de Montpellier
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Richard Cloutier, Professor, Université du Québec à Rimouski
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