

BENHAÏM David

Date of birth : 16/03/1967, Paris (France)

Nationality : French

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PROFESSIONAL EXPERIENCE

- July 1, 2020-present: **Professor**
Hólar University, Dep. of Aquaculture and Fish Biology.
Saudárkrókur, Iceland.
➤ *Teaching: aquaculture.*
➤ *Research: farmed fish adaptation and behavioural ecology.*
- 2017-2020: **Associate Professor (Docent)**
Hólar University, Dep. of Aquaculture and Fish Biology.
Saudárkrókur, Iceland.
- 2001- 2017: **Lecturer in aquatic animal sciences (with 50% research and 50% teaching).**
INTECHMER, Cherbourg (France).
➤ *Head of aquaculture department.*
➤ *Teaching: theory & practice (nutrition, anatomy, physiology, zootechny, ethology).*
➤ *Research: aquaculture fish adaptation.*
- 1997 - 2001: **Research assistant in hydrobiology.**
ENS, Laboratoire d'écologie UMR CNRS 7625, Paris , France).
➤ *Field work: lake sampling (plankton, fish, water).*
➤ *Laboratory work: water chemistry and biochemistry, microbiology.*
➤ *Phytoplankton and zooplankton culture.*
➤ *Experimental setup in microcosms and mesocosms.*
- 1996-1997 : **Freelance consultant in human Ethology**

EDUCATION

- 2016 : **Habilitation à diriger des recherches (accreditation to supervise research).**
This diploma is delivered by the French University (several years after a PhD completion) after the completion and the defence of a research project. This is a prerequisite to apply for a Professor position at the University.
University of Caen, France.
Title : Behavioural adaptation in teleosts : basic concepts and applications
- 2008 - 2011 **PhD** obtained with distinction.
Subject: Characterization of behavioural adaptation in farming teleosts: plasticity and effects of domestication.
University of La Rochelle (France).

Advisors: Dr. Marie-Laure Bégout & Dr. Béatrice Chatain (Ifremer l'Houmeau & Palavas).

- 1995 - 1996 **Master's degree (year 2)** in applied Ethology and chronobiology, with honours, University of Paris 13 (France). **In France, there are two projects in two years (subjects 1 and 2) for a MSc.**
Student placement at Hólar University College (Iceland)
Subject 2 (6-month internship): behavioural variation in relation to body size in Arctic charr juveniles.
Advisor: Prof. Skúli Skúlason.
- 1994 - 1995 **Master's degree (year 1)** Population biology and ecology, Univ. St-Jérôme, Marseille, France.
Subject 1 (5-month internship) : Multivariate analyses of diploid and triploid Pacific oysters *Crassostrea gigas*.
Advisor : Pr. Maurice Roux
- 1993 - 1994 **Bachelor's degree** : Population biology and ecology, Univ. St-Jérôme, Marseille, France.
Subject (2-month internship at Ifremer, La Tremblade, France) : Induction of triploidy in Pacific oyster *Crassostrea gigas*.
- 1991 - 1993 **Higher Standard Technician in marine Sciences**, CNAM-INTECHMER, Cherbourg, France
Subject (5-month internship at Ifremer, La Tremblade, France): Biological performances comparison between diploid and triploid Pacific oysters *Crassostrea gigas* populations.
Advisor: Dr. André Gérard

CERTIFICATES

Qualifications and competence to perform the duties of a Professor at the University in the section 68 (biology of organisms), obtained in 2017.

- 2016 (5 days) **DU in Ethology**, wild animals, production animals and pets, module 6 : « Comparative cognition and brain ». University of Rennes 1, France.
- 2013 (4 days) **Degree in aquatic animal surgery.**
Ecole Nationale Vétérinaire, Nantes, France.
- 2010 (10 days) **Degree authorisation for the use of laboratory animals.**
Ecole Nationale Vétérinaire, Nantes, France.
- 1998-2000 **Certificate** in statistics.
Conservatoire National des Arts et Métiers, Paris, France.

RESEARCH AND EDUCATIONAL PROGRAMS

As a leader of several national and international multidisciplinary research and educational projects, I am involved in the administration of research. This includes proposal and budget preparation, proposal submission, accounting throughout project development and implementation.

1. -2020 : **Rannís Student innovation Grant** (207460-0091). PI of the project aiming at: developing and testing protocols for fish behavior.
2. -2019-2022: **Rannís grant**. PI of the project aiming at assessing the evolution of cognition of sympatric morphs of Arctic charr (*Salvelinus alpinus*).
3. -2018-2019: **AVS grant**. Co-applicant of the project aiming at assessing the benefits of a new prebiotic-enhanced soy meal and its impact on growth performance, gut health and welfare of Arctic charr (*Salvelinus alpinus*).
4. -2018-2021: **ERASMUS + project – KA2** – Cooperation for Innovation and the Exchange of Good Practices. Participation to the project aiming at developing an innovative vocational training course in aquaculture in collaboration with Norway and Faroe Islands.
5. -2016-2018: **ERASMUS + BlueEDU Sector Skills Alliance project**. Participation to the project through an analysis of the supply of education and training for aquaculture projects in France (one of 12 countries involved in the project).
6. -2017-2018: **Rannís equipment grant**. Co-applicant of the project aiming at creating a National Center for fish behaviour.
7. -2016-2019: **Rannís grant**. Participation to the project : *Diel activity in Arctic charr: phenotypic and ecological determinants*. Supervision of a MSC and a PhD student in the part of the project aiming at assessing personality traits of the fish in lab conditions.
8. -2017-2018: **Triploid salmon project** (internally funded). Leader of this project aiming at a comparative study between diploid and triploid salmon at early stage of development including growth performances, survival, malformation rate, morphometrics, swimming behavior, boldness, gut microbiome.
9. -2017-2018: **Rannís grant**. Participation to the project : *Seasonal stability of food webs in an Icelandic freshwater spring*. My contribution consisted of field work and fish behaviour at the end of the experiment in lab conditions.
10. -2017-2018: **PhD project**. Participation to the project : Reproductive barriers between small benthivorous and planktivorous morphs of Arctic Charr (*Salvelinus alpinus*) from an Icelandic lake, Thigvallavatn. Post-zygotic barriers. My contribution was to develop an experiment on personality traits.
11. -2015-2018 : **PASEAFIC EU FEDER Project** : Responsible for WP2 : Environmental assessment of hydrokinetic power based on fish behavioural and physiological indicators.
12. -2014-2016 : **Turbisant project** – Impact of turbidity on salmon health - Responsible for WP4: impact on blood physiological parameters - funded by the “Syndicat Mixte du Cotentin” & “Conseil Régional de Basse Normandie”.
13. -2011-2015 : **CopeWell** (EU-FP7) - New integrative framework for the study of fish welfare based on the concepts of allostasis, appraisal and coping styles. Participation in several experiments on sea bass.
14. -2014-2015 : **IPERBAR Project** - Identification of personality traits in sea bass : leader of this project funded by the “Syndicat Mixte du Cotentin” & “Conseil Régional de Basse Normandie”.

15. -2014-2015: **CARCOPHY project** (Fish behavioural and physiological characterization) - leader of this project funded by the “Syndicat Mixte du Cotentin” & “Conseil Régional de Basse Normandie”.
16. -2014-2015: **CEPHALOS project** (influence of life conditions on cuttlefish eggs and subsequent juveniles behaviour and physiology) – Partner of this project funded by “Conseil Régional de Basse Normandie”.
17. -2011-2013: **CARCOP project** (Fish behavioural characterization) - leader of this project funded by the “Syndicat Mixte du Cotentin” & “Conseil Régional de Basse Normandie”.
18. 2012: **Asgard program** – Laureate (invitation of researchers between France and Norway).
19. -2010-2011: **CARCOBAR project** (Sea bass behavioural characterization) - leader of this project funded by the “Syndicat Mixte du Cotentin” & “Conseil Régional de Basse Normandie”.
20. -2008-2012 : **GDR Ifremer-INRA « Genetic improvement for sustainable aquaculture » (AGpi)** – multidisciplinary approach including ethology, physiology and genetics.
21. -2010: **VALLA** European project - Validation of All Lifelong Learning in Aquaculture: external evaluator of the project. <http://www.vallaproject.com/>
22. -2006-2009 & 2009-2012: **AQUATNET** European programmes – participation to a European Thematic Network in the field of aquaculture, fisheries and aquatic resources management. <http://www.aquatnet.com>
23. -2003-2006: **Wave** European project – Data collection through farm visits, consultation with education bodies, participation to the development of a complete competencies list for European Aquaculture and guidelines, results dissemination (Aquaculture conference, Lyon, 2006). <http://www.waveproject.com>
24. -2003-2004: **AFANET** European project – participation in a Thematic Network for Agriculture, Forestry, Aquaculture and the Environment.
25. -2002-2004: **PISCES** European project – Contribution to the Educational Materials Database (Aquaculture). <http://www.piscestt.com>

STUDENTS SUPERVISION

Postdoc

Ferrari S. 2015-2017. Environmental assessment of hydrokinetic power based on fish behavioural and physiological indicators (PASEAFIC project, see above). I was the main supervisor of the research project.

PhD

1. Beukeboom, R. 2019-2022. Movement patterns and habitat use in fishes in relation with personality traits. HUC, Iceland. I am the main supervisor of the research project.
2. Dellinger, M. 2019-2022. Evolution of Arctic charr (*Salvelinus alpinus*) sympatric morphs cognition. HUC, Iceland. I am the main supervisor of the research project.
3. Leeper, A. 2018-2021. Dietary manipulation of the gut microbial community in farmed salmonids-

toward optimal production, Norwegian University of Life Sciences: NMBU, Matís, Hólar University College. I am supervising 50% of the research project

4. Ferrari, S., 2012-2014. Characterisation, variability and heritability of personality traits in teleosts. Defended with honours, University of la Rochelle, France, 325 pp. I was supervising 50% of the research project.

MSc projects

1. Morris-Bennett, L.A. 2020-2022. Sustainable Culture of Microalgae for Mangrove Oyster *Crassostrea Rhizophorae* under Hatchery conditions in Jamaica. HUC, Iceland. I am the main supervisor of the research project.
2. Choblet, Maxime, 2020. Spatial cognition in the arctic charr large benthic morph of Thingvalavatn. MSC year 2 internship at HU, University of Rennes 1, France. I was the main supervisor of the research project.
3. Suret, Léo, 2020. How early-life rearing environment impacts welfare in Arctic charr (*Salvelinus alpinus*) ? A morphological, behavioural and cognitive approach. MSC year 2 internship at HU, University of Rennes 1, France. I was the main supervisor of the research project.
4. Ladurée, Gabrielle. The Icelandic Arctic charr (*Salvelinus alpinus*) as a model to inspect the impact of ecological factors on the spatial cognition, 20 pp. **MSc Neurosciences-Behavioral sciences**, year 1, internship at HU, University of Caen, France. I was the main supervisor of the research project
5. Philip, J. 2019-2021. Arctic charr (*Salvelinus alpinus*) personality traits in the context of aquaculture. HUC, Iceland. I am the main supervisor of the research project.
6. Sauphar, C. 2019. Sustainable aquaculture, assessing the impact of novel feed ingredients on the growth performance and behaviour of juvenile salmonids. European MSc in Marine Environment and Resources (MER MSc), University of the Basque Country (UPV/EHU). (Matís/HUC internship , Iceland). I am the main supervisor of the research project.
7. Leeper, A. 2017. Sustainable novel feeds in Atlantic Salmon aquaculture at early stage of development: an investigation of nutrition, gut microbiome and behaviour. MSc Erasmus Mundus Scholarship student on the Marine Environment and Resources Program, University of Southampton (Matís/HUC internship, Iceland). I was the main supervisor of the research project.
8. Vernier, L. 2016- . Relationship between egg size, metabolic rate, growth and personality traits of individuals in divergent populations of Salmonids. MSc Behavioural Ecology, Hólar University College, Iceland (HUC internship). I am one of three supervisors on the research project.
9. Bowie, M., 2015. Effect of the aquarists on shark's feeding behaviour. MSc year 2 in Ethology, University of Paris 13, France. I was the main supervisor of the research project.
10. Bowie, M., 2014. The effect of an artificial incubation environment on hatchling size and behavior in the cuttlefish, *Sepia officinalis*. MSc year 1 in Ethology, University of Paris 13, France. I was the main supervisor of the research project.
11. Theysset, R., 2014. Link between personality traits and familiarity in sea bass, MSc contract. I was the main supervisor of the research project.
12. Féry, S., 2014. Behavioural syndrome in sea bass based on self-feeding demand, social interaction,

openfield exploration and response to hypoxia. MSc contract. I was the main supervisor of the research project.

13. Colchen, T., 2013. Relation between self-feeding behaviour and personality traits in sea bass (*Dicentrarchus labrax*). MSc year 1 in Ethology, University of Paris 13. (Intechmer/Ifremer La Rochelle collaboration). I was the main supervisor of the research project.
14. Theysset, R., 2012. Personality traits identification based upon hypoxia test and mecano acoustic stimulation in sea bass (*Dicentrarchus labrax*). MSc year 1 in Ethology, University of Paris 13 (Intechmer/Ifremer La Rochelle collaboration). I was the main supervisor of the research project.
15. Leblanc, C., 2006. Foraging behaviour in Arctic charr juveniles (*Salvelinus alpinus*, L.): impact of body size, social environment and temperature. MSc year 2, Sciences & Technology, option in animal sciences, INA Paris-Grignon ENV Alfort INRA Jouy-en-Josas, France (HUC internship). I was the main supervisor of the research project.
16. Leblanc, C., 2005. Development of behavioural differences, i.e. foraging strategies, mobility and location in the water column, among Arctic charr juveniles. MSc year 1 in biology option Ecology, Ecole Normale Supérieure/ Université Pierre et Marie Curie, Jussieu, France (HUC internship). I was the main supervisor of the research project.

Engineering schools (equivalent to MSc level)

1. Caperaa, Maud, 2021. Preference tests in the arctic charr large benthic morph of Thingvalavtan. ECOLE NATIONALE SUPERIEURE DES SCIENCES AGRONOMIQUES, AGROALIMENTAIRES, HORTICULTURES ET DU PAYSAGE, Rennes, France. I was the main supervisor of the research project.
2. Pratt Audrey, 2021. Effect of physical enrichment on brain morphology in juvenile arctic charr. AgroParitech, Paris, France. I was the main supervisor of the research project
3. Caïdi, D., Liegre, A., Grondin, A., 2008. Heat losses modelling in a recirculating system dedicated to sea bass larvae farming. Engineer school, final year, Cherbourg, France. I was the main supervisor of the research project.
4. Le Gall, M., Varin, C., 2008. Lighting optimization for sea bass farming. Engineer school, final year, Cherbourg, France (Internship supervision). I was the main supervisor of the research project.
5. Lespinasse, N., 2008. Automatic control of water level in aquaculture tanks. Engineer school, final year, Cherbourg, France. I was the main supervisor of the research project.

BSc level

1. Maguinness, Ruth, 2021. Behavioural syndrome in juvenile arctic charr in relation with rearing environment. HAS university of applied sciences year 2, Netherlands (HUC internship). I was the main supervisor of the research project.
2. Bon, Marloes, 2020 Developing a group test to assess boldness in Arctic Char (*Salvelinus alpinus*). HAS university of applied sciences year 2, Netherlands (HUC internship). I was the main supervisor of the research project.
3. Sprockel, Evert. 2020. Personality plasticity in relation to feeding modalities in sympatric morphs of

- Arctic charr (*Salvelinus alpinus*). HAS university of applied sciences year 2, Netherlands (HUC internship). I was the main supervisor of the research project.
4. Bennett, Leanne, 2020. Developing a protocol for the sustainable culture of microalgae for Mangrove oyster *Crassostrea Rhizophorae* under hatchery conditions in the Jamaican environment. The United Nations University, Fisheries Training Programme (HUC internship). I was the main supervisor of the research project.
 5. Berlizot, Benoit. 2019. Sustainable aquaculture, assessing the impact of novel feed ingredients on the growth performance and behaviour of juvenile salmonids. Intechmer, Cherbourg, France. (HUC internship). I am the main supervisor of the research project.
 6. Desclos, Alia, 2018. Behavioural differences between small benthivorous, planktivorous morphs and hybrids of Arctic Charr (*Salvelinus alpinus*) from an Icelandic lake, Thigvallavatn. Intechmer, Cherbourg, France. (HUC internship). I was the main supervisor of the research project.
 7. Merlin, Yves, 2018. Effect of live feed on growth and survival of Arctic charr juveniles. The United Nations University, Fisheries Training Programme (HUC internship). I was the main supervisor of the research project.
 8. Sijstermans, Koen, 2017. Setting up intermittent flow respirometry systems and conducting standard metabolic rate tests. HAS university of applied sciences year 3, Netherlands (HUC internship). I was one of two supervisors of the research project.
 9. Forgako, E., 2017. Techniques of controlling tilapia mixed sex tilapia and the practicability of hormonal sex reversal in Cameroon. The United Nations University, Fisheries Training Programme (HUC internship). I was one of two supervisors of the research project.
 10. Ramos, M., 2015. Self-feeding behaviour and personality traits in tilapia: A comparative study between *Oreochromis niloticus* and *Sarotherodon melanotheron*. BSc (with honours), University of La Rochelle, France (Internship at Ifremer La Rochelle). I was the main supervisor of the research project.
 11. Bazile, N., 2012. Thermal study of a recirculating system in aquaculture. Higher Standard Technician, monitoring, instrumentation, automation, CIRA, Cherbourg, France (Internship). I was the main supervisor of the research project.
 12. Besson, M., 2009. Effect of egg size on juvenile arctic charr *Salvelinus alpinus* behaviour. Higher Standard Technician in marine Sciences, Cnam-INTECHMER, Cherbourg, France (HUC internship). I was one of two supervisors of the research project
 13. Blanc, N., 2009. Early life behavioural differences in wild caught and domesticated sea bass (*Dicentrarchus labrax*). BSc in animal production, option : Continental aquaculture & Aquariology, Nancy, France (Internship). I was the main supervisor of the research project.
 14. Brisset, B., 2009. Effect of size grading on sea bass (*Dicentrarchus labrax*) juvenile self-feeding behaviour, social structure and culture performance. Higher Standard Technician in marine Sciences, Cnam-INTECHMER, Cherbourg, France (Internship). I was the main supervisor of the research project.
 15. Le Deuff, S., 2007. Maternal effect on juvenile arctic charr (*Salvelinus alpinus*) growth performances and behaviour. Higher Standard Technician in marine Sciences, Cnam-INTECHMER, Cherbourg, France (HUC internship). I was one of two supervisors of the research project

16. Manca, M., 2010. Impact of a plant-based diet on behavioural and physiological traits in sea bass (*Dicentrarchus labrax*). Higher Standard Technician in marine Sciences, Cnam-INTECHMER, Cherbourg, France (Internship). I was the main supervisor of the research project

Higher Standard Technician in Marine Sciences, Cnam-INTECHMER, Cherbourg, France

Between 2001 and 2017, over the course of this degree, I was the main supervisor of 56 projects (6 months each) on various topics often linked with my research activity in this diploma framework. I tutored and evaluated as a jury member 120 end-of-studies internships.

RESEARCH EVALUATION

PhD committees

1. Kleiber Aude (2020-2023). Cognitive enrichment in rainbow trout aquaculture. University of Rennes, INRA, France.
2. Alfonso Sébastien (2016-2018). Impact of persistent organic pollutants on zebrafish coping styles. Ongoing PhD, Ifremer l'Houmeau, University of La Rochelle, France.
3. Carrera Garcia, Erika (2014-2017). Dispersal and survival analysis of migratory fish yearlings within the frame of stocking program : study case on European sturgeon, PhD defended in 2017, ISRSTEA, University of Bordeaux.
4. Vignet Caroline (2012-2014). Physiological alteration of fish exposed to polycyclic aromatic hydrocarbons, behaviour and reproduction, PhD defended in 2014, Ifremer l'Houmeau, University of La Rochelle.

Research projects

- November 2009 & 2010: Review of two research projects funded by “**The Icelandic Research Fund** »
- September 2014 & 2015 : Review of two research projects funded by “**The Danish Council for Independent Research International**” Review MOBILEX.
- Reviewer for: **Aquaculture Research, North American Journal of Fisheries Management, Environmental Biology of Fishes, Chinese Journal of Oceanology and Limnology, Animal cognition, Physiology and Behavior, Integrative Zoology, Plos One.**

PUBLICATIONS & COMMUNICATIONS

Peer reviewed articles

1. Kreilling, A.-K., O’Gorman, E. J., Pálsson, S., **Benhaïm, D.**, Leblanc, C. A. L., Ólafsson, J. ., & Kristjánsson, B. K. (2020). Seasonal variation in the invertebrate community and diet of a top fish predator in a thermally stable spring. *Hydrobiologia*, 5. <https://doi.org/10.1007/s10750-020-04409-5>
2. **Benhaïm, D.**, Leblanc, C.A.L., Horri, K., Mannion, K., Galloway, M., Leeper, A., Knobloch, S., Sigurgeirsson, Ó., Thorarensen, H., 2020. The effect of triploidy on the performance, gut

- microbiome and behaviour of juvenile Atlantic salmon (*Salmo salar*) raised at low temperature. *Appl. Anim. Behav. Sci.* 229, 105031. <https://doi.org/10.1016/j.applanim.2020.105031>
3. Poirier I, **Benhaïm D**, Poizot E, et al. Marine aggregates in North Atlantic coast: Microbial characteristics and potential interactions with farmed Atlantic salmon (*Salmo salar*), 2020. *Mar Environ Res.*;157:104864. doi:10.1016/j.marenvres.2019.104864
 4. Leblanc, C.A.L., Horri, K., Skúlason, **Benhaïm, D.** 2019. Subtle temperature increase can interact with individual size and social context in shaping phenotypic traits of a coldwater fish. *Plos ONE*. 14(3): e0213061, doi: [10.1371/journal.pone.0213061](https://doi.org/10.1371/journal.pone.0213061).
 5. **Benhaïm, D.**, Akian, D.D., Ramos, M., Ferrari, S., Yao, K. & Bégout, M.-L., 2017. Self-feeding behaviour and personality traits in tilapia: A comparative study between *Oreochromis niloticus* and *Sarotherodon melanotheron*. *Applied Animal Behaviour Science* 187, 85-92. <https://doi.org/10.1016/j.applanim.2016.12.004>.
 6. **Benhaïm, D.**, Ferrari Sébastien, Colchen, T., Chatain B. & Bégout, M.-L., 2017. Relationship between individual and group learning in a marine teleost: A case study with sea bass under self-feeding conditions. *Learning & Behavior* 45(3), 276-286. <http://dx.doi.org/10.3758/s13420-017-0266-1>
 7. Ferrari, S., Horri, K., Allal, F., Vergnet, A., **Benhaïm, D.**, Vandeputte, M., Chatain, B. & Bégout, M.-L., 2016. Heritability of Boldness and Hypoxia Avoidance in European Sea bass, *Dicentrarchus labrax*. *PLoS ONE* 11, e0168506. DOI: [10.1371/journal.pone.0168506](https://doi.org/10.1371/journal.pone.0168506)
 8. O'Brien C., Bowie, M., Billard, P., Darmaillacq, S., Jozet-Alves, C., **Benhaïm, D.**, Basuyaux, O., Dickel, L. 2016. The effect of an artificial incubation environment on hatchling size and behavior in the cuttlefish, *Sepia officinalis*. *Life and Environnement* 66, 97–105. <https://doi.org/10.1109/ICIEV.2016.7759989>.
 9. **Benhaïm, D.**, Ferrari, S., Chatain, B. & Bégout, M-L. 2016. The shy prefer familiar congeners. *Behavioural Processes* 126: 113-120. <https://doi.org/10.1016/j.beproc.2016.03.008>.
 10. Ferrari, S., **Benhaïm, D.**, Colchen, T., Chatain, B., Bégout, M.-L., 2014. First links between self-feeding behaviour and personality traits in European seabass, *Dicentrarchus labrax*. *Appl. Anim. Behav. Sci.* 161. <https://doi.org/10.1016/j.applanim.2014.09.019>.
 11. **Benhaïm, D.**, Bégout, M.L., Chatain, B. 2013. Exploration and cognition in wild caught and domesticated sea bass (*Dicentrarchus labrax*) in a maze. *Plos one* 8(6), e65872. <https://doi.org/10.1371/journal.pone.0065872>.
 12. **Benhaïm, D.**, Guyomard, R., Chatain, B., Quillet, E. & Bégout, M-L. 2013. Genetic differences for behaviour in juveniles from two strains of brown trout suggest an effect of domestication history. *Applied Animal Behaviour Science* 147: 235-242 <https://doi.org/10.1016/j.applanim.2013.04.022>.
 13. **Benhaïm, D.**, Bégout, M.-L., Péan, S. Manca, M., Prunet, P. & Chatain, B. 2013. Impact of a plant-based diet on behavioural and physiological traits in sea bass (*Dicentrarchus labrax*). *Aquatic Living Resources* 26: 121-131. <https://doi.org/10.1051/alr/2013049>.
 14. **Benhaïm, D.**, Bégout, M-L. & Chatain, B. 2013. Unfamiliar congener used as a visual attractor in wild caught and domesticated sea bass (*Dicentrarchus labrax*) placed in a T-maze. *Journal of Aquaculture Research and Development* 4: 169-176. <https://doi.org/10.4172/2155->

15. **Benhaïm, D.**, Péan, S., Lucas, G., Blanc, N., Chatain, B., Bégout, M.-L., 2012. Early life behavioural differences in wild caught and domesticated sea bass (*Dicentrarchus labrax*). *Applied Animal Behaviour Sciences* 141, 79-90. <https://doi.org/10.1016/j.applanim.2012.07.002>.
16. **Benhaïm, D.**, Bégout, M.L., Péan, S., Brisset, B., Leguay, D., Chatain, B., 2012. Effect of fasting on self-feeding activity in juvenile sea bass (*Dicentrarchus labrax*) in self-feeding conditions. *Applied Animal Behaviour Sciences* 136, 63-73. <https://doi.org/10.1016/j.applanim.2011.11.010>.
17. **Benhaïm, D.**, Péan, S., Brisset, B., Leguay, D., Bégout, M.L., Chatain, B., 2011. Effect of size grading on Sea bass (*Dicentrarchus labrax*) juvenile self-feeding behaviour, social structure and culture performances. *Aquatic Living Resource* 24, 391-402. <https://doi.org/10.1051/alr/2011140>.
18. Leblanc, C.A.L., **Benhaïm, D.**, Hansen, B.R., Kristjánsson, B.K., Skúlason, S., 2011. The Importance of Egg Size and Social Effects for Behaviour of Arctic Charr Juveniles. *Ethology* 117, 664-674. <https://doi.org/10.1111/j.1439-0310.2011.01920.x>.
19. **Benhaïm, D.**, Leblanc, C.A., Lucas, G., 2009. Impact of a new artificial shelter on Arctic charr (*Salvelinus alpinus*, L.) behaviour and culture performance during the endogenous feeding period. *Aquaculture* 295, 38-43. <https://doi.org/10.1016/j.aquaculture.2009.06.024>.
20. Daufresne, T., Lacroix, G., **Benhaïm, D.**, Loreau, M. (2008). Coexistence of algae and bacteria: a test of the carbon hypothesis. *Aquatic Microbial Ecology* 53: 323-332. <https://doi.org/10.3354/ame01254>.
21. **Benhaïm, D.**, Skúlason, S. and Hansen, B.R. (2003). Behavioural variation in juvenile Arctic charr in relation to body size. *Journal of Fish Biology* 62, 1326-1338. <https://doi.org/10.1046/j.1095-8649.2003.00114.x>

Book chapters

1. Millot, S., Bégout, M.-L., **Benhaïm, D.** (2014). Foraging behaviour. In : The Biology of Sea bass (F.J. Sánchez-Vázquez & J.A. Muñoz-Cueto Eds), Science Publishers, Ltd, British Channel Islands, Enfield, New Hampshire, USA, 207-230 pp.
2. Baudoin, C., **Benhaïm, D.**, Koch-Schott, C. 2009. Aspects méthodologiques et relations avec d'autres approches du comportement. In Pham-Delègue M-H, Boissy, C A et Baudoin C. (sous la direction de). Ethologie appliquée, comportements animaux et humains, questions de société. Partie 6 - Ethologie humaine, une discipline en émergence. Editions Quae, Paris.
3. **Benhaïm, D.**, Koch-Schott, C., 2009. Approche éthologique des pratiques de consommation In Pham-Delègue M-H, Boissy, C A et Baudoin C. (sous la direction de). Un point sur l'éthologie. Chapitre V- Ethologie humaine, une discipline en émergence. Editions Quae, Paris.
4. **Benhaïm D.**, 2003. Ethologie appliquée à la distribution. In. Baudoin C. (sous la direction de). L'éthologie appliquée aujourd'hui. Vol.III: Ethologie humaine. Editions ED Levallois-Perret ISBN 2-7237-0025-9, Vol.: III, Pages: 19-24.
5. **Benhaïm, D.** 2003. Etude éthologique dans le rayon jeans d'un hypermarché allemand. In. Baudoin C. (sous la direction de). L'éthologie appliquée aujourd'hui. Vol.III: Ethologie humaine. Editions ED Levallois-Perret ISBN 2-7237-0025-9, Vol.: III: 93-104.

Posters

1. Quentin J.-B. Horta-Lacueva, **David Benhaïm**, Camille A.-L. Leblanc, Sigurður S. Snorrason, Alia Desclos, Kalina H. Kapralova. 2019. Personality and its implications in ecological speciation. CRC Conference, USA.
2. Leeper, A., Smáráson, B. Ö., Berlin, A., Ekmay, R. D, **Benhaïm, D.** and Árnarson, J. 2018. *Paecilomyces variotii* as a replacement for soy protein in salmonid diets. 18th International Symposium on Fish Nutrition and Feeding, Las Palmas de Gran Canaria, June 3rd-7th, Spain.
3. Vernier, L., **Benhaïm, D.**, Kristjánsson, B.K., Leblanc, C. A.-L. 2017. The importance of egg size for variation in life history traits and behaviour of individuals in a polymorphic fish at different level of divergence. Behaviour Conference, 30th July-4th August, Estoril, Portugal.
4. Leblanc C. & **Benhaïm, D.** 2017. The interplay of egg size, temperature and social context in maintaining phenotypic diversity in fish. Behaviour Conference, 30th July-4th August, Estoril, Portugal.
5. Vernier L., V. Beck S., Reilent A., **Benhaïm D.**, Kristjánsson B.K. & Leblanc Camille A.-L. 2015. Relationship between egg size, metabolic rate, growth and personality traits of individuals in divergent populations of Salmonids. Biological Conference, Reykjavik, Iceland, November.
6. **Benhaïm, D.**, Ferrari, S., Theysset, R., Chatain, B., & Bégout, M-L. 2013. Personality traits identification based upon hypoxia test and Mecano Acoustic Stimulation in European sea bass (*Dicentrarchus labrax*). SEB Valencia meeting, Spain, 4-6 July.
7. **Benhaïm, D.**, Leblanc, C.A., Lucas, G., 2009. Impact of a new artificial shelter on Arctic charr (*Salvelinus alpinus*, L.) behaviour and culture performance during the endogenous feeding period. International Ethological Conference (IEC), Rennes, France, August 2009.
8. Leblanc, C.A., **Benhaïm, D.**, Hansen, B. R., 2009. Maternal and social effects in early behaviour of arctic charr (*Salvelinus alpinus* L.) juveniles. International Ethological Conference (IEC), Rennes, France, August 2009.
9. Leblanc, C., Kristjánsson, B.K., **Benhaïm D.**, Skúlason, S., Noakes, D.L.G. 2008. Does egg size affect behaviour and morphology of Arctic charr (*Salvelinus alpinus*)? GDR d'Ethologie, Paris, France, May 2008.
10. Leblanc, C., Skúlason, S., **Benhaïm, D.** and Hansen, B.R. 2006. Long and short term temperature variations in Arctic charr juveniles foraging behaviour and mobility (*Salvelinus alpinus*, L.). V International Charr Symposium, Reykjavik, Iceland, 1-5 august 2006.
11. **Benhaïm, D.**, Skúlason, S. and Hansen, B.R. 1998. Behavioural variation in juvenile Arctic charr in relation to body size. Workshop of the cost 827 action on voluntary food intake in Fish: The feeding behaviour of fish in culture, Umea, Sweden.

Oral communications

1. **Benhaïm, D.**, Vernier, L., Kristjánsson, B.K., Leblanc, C.A-L. 2020. How does personality vary between morphs of Arctic charr ? The fourth conference of the Nordic Society Oikos, Ecology in the Anthropocene, Reykjavik, Iceland, 3 - 5 March 2020.
2. Dellinger, M., Sprockel, E., Philip, J., Steele S., Pálson, D., **Benhaïm, D.** Tell me how you eat, I'll

tell you who you are: how does feeding modalities affect personality distribution in the Arctic charr (*Salvelinus alpinus*)? The fourth conference of the Nordic Society Oikos, Ecology in the Anthropocene, Reykjavik, Iceland, 3 - 5 March 2020.

3. Horta-Lacueva, Q.J.-B, **Benhaim, D.**, Snorrason, S., Desclos, A., Kapralova, K. 2020. Animal personality is linked to the adaptive diversification of Arctic charrs in Iceland. The fourth conference of the Nordic Society Oikos, Ecology in the Anthropocene, Reykjavik, Iceland, 3 - 5 March 2020.
4. **Benhaim, D.**, Kreiling, A.-K, Leblanc, C.A.-L., Kristjánsson, B.K. 2019. Link between ecological factors and boldness in Arctic charr population located in freshwater spring. Ecological society of Iceland conference, March 29-30th
5. Mannion, K., Delarue, C., Koolmees, J., Benhaim, D., Steingrímsson S.Ó. 2019. Food Availability and Diel Activity in stream-dwelling Arctic charr (*Salvelinus alpinus*). Ecological society of Iceland conference, March 29-30th
6. Quentin J.-B.Horta-Lacueva, **David Benhaim**, Camille A.-L. Leblanc, Sigurður S. Snorrason, Alia Desclos, Kalina H. Kapralova. 2019. What Arctic charr can tell us about the role of personality in speciation. Ecological society of Iceland conference, March 29-30th
7. **Benhaim, D.**, Leeper, A., Smáráson, B.Ö. and Árnason, J. 2018. Replacing Soy with Black Soldier Fly larvae in aquafeeds for juvenile Atlantic Salmon affects growth, swimming activity and boldness. EAS, Aqua 2018, August 25-29, Montpellier, France.
8. Leeper, A., **Benhaim, D.**, Smáráson, B.O., Árnason, J. 2017. A sustainable novel feed in Atlantic salmon aquaculture during a crucial growth period: an investigation of nutrition and behavior. 52nd European Marine Biology Symposium, Portoroz, Slovenia, September 25-29.
9. Vernier, L., **Benhaim, D.**, Kristjánsson, B.K., Leblanc, C. A.-L. 2017. The importance of egg size for variation in life history traits and behaviour of individuals in a polymorphic fish. OE3C, 18-20 October, Kingston, Canada.
10. Allal, F., Ferrari, S., Horri, K., Vergnet, A., **Benhaim, D.** Vandeputte, M., Chatain, B., Bégout, M.-L. 2017. Heritability of boldness and hypoxia avoidance in European sea bass *Dicentrarchus labrax*. EAS, October 17-20, Dubrovnik, Croatia.
11. Vernier, L., **Benhaim, D.**, Kristjánsson, B.K., Leblanc, C. A.-L. 2017. The importance of egg size for variation in metabolism, growth and behaviour of individuals in a polymorphic fish. Sfécologie-2016, International conference of ecological sciences, 24-28 October, Marseille, France.
12. Bégout, M.-L., Akian, D.D., Ramos, M., Yao, K., **Benhaim, D.** 2016. Linking self-feeding behaviour and personality traits in two tilapia species *Oreochromis niloticus* (Linné, 1758) and *Sarotherodon melanotheron* (Rüppel, 1852). European Aquaculture Society, Edinburgh, Scotland, September, 20-23, 2016.
13. **Benhaim, D.**, Ferrari, S., Colchen, T. & Bégout, M.-L. 2016. Relationship between individual and group cognition in sea bass under self-feeding conditions. SFECA, Caen, March, 22-24, 2016.
14. **Benhaim, D.**, Ferrari, S., Colchen, T. & Bégout, M.-L. 2015. Response learning consistency in sea bass groups under self-feeding conditions. Behaviour, 34th International Ethological Conference, Cairns, Australia, August, 9-14, 2015.

15. **Benhaïm, D.**, Ferrari, S., Chatain, B. & Bégout, M-L. 2015. The shy prefer congeners with whom they are familiar. SFECA, Strasbourg, April, 21-23, 2015.
16. **Benhaïm, D.**, Ferrari, S., Theysset, R., Chatain, B. & Bégout, M-L. 2014. Personality traits identification based upon hypoxia test and mecano acoustic stimulation in European sea bass. 4th International Conference of Aquaculture Indonesia (ICAI), Padjadjaran University, Bandung, Indonesia, June 20-21, 2014.
17. **Benhaïm, D.** How to approach sea bass cognition and behaviour ? 2012. (Invited lecture). Environmental modifications of the fish brain, The NordForsk Behavioural Fish Neuroscience Network (BiFiNe). Bergen, Norway, 12-14 November 2012.
18. **Benhaïm, D.** What are the differences between farmed and wild fish ? (Invited lecture), Institut français, Oslo, 3 October 2012.
19. **Benhaïm, D.**, Guary, J.C., Péan, S., Brisset, B., Leguay, D., Bégout, M.L., Chatain, B. Effect of size grading on Sea bass (*Dicentrarchus labrax*) juvenile self-feeding behaviour, social structure and culture performances 2012. Aqua2012, Prague, 1-5 September 2012.
20. **Benhaïm, D.** Behavioural characterization of farming teleosts 2012 (Invited lecture), Saudárkrókur NW-Iceland, 11 April 2012.
21. **Benhaïm, D.** Behavioural assessment of personality traits and coping styles in the context of farming fish adaptation 2011 (Invited lecture), University of Paris XIII, October 2011.
22. **Benhaïm, D.**, Leblanc, C., Skúlason, S., and Hansen, B.R. 2008. Evidence for an inherent variation in behaviour of Arctic charr juveniles based on isolation versus group experiments. GDR d'Ethologie, Paris XIII, France, May 2008.
23. Leblanc, C., Skúlason, S., **Benhaïm, D.**, and Hansen, B.R. 2006. Foraging behaviour in Arctic charr juveniles (*Salvelinus alpinus*, L.): impact of body size and social environment. V International Charr Symposium, Reykjavik , Iceland, 1-5 August 2006.
24. **Benhaïm, D.** 2004. Ethology applied to aquaculture, SFECA, Caen, France, 17-19 March 2004.
25. **Benhaïm, D.** & Koch-Schott C. 2000. Ethology applied to industry and trade, Colloque d'éthologie appliquée 2000, University of Paris 13, Villetaneuse, France, 22-24 November 2000.
26. **Benhaïm, D.**, Skúlason, S. and Hansen, B.R. 2004. Behavioural variation in juvenile Arctic charr in relation to body size, Ecological and Evolutionary Ethology of Fishes (EEEF), Saudárkrókur NW-Iceland, 17-21 August 2004.

ADMINISTRATION

- Since 2019: Leader of the UNU-FTP Specialization line at Hólar University.
- Since 2018: Academic responsible of the Arctic charr breeding programme at Hólar University.
- Since 2018: Head of animal care committee at Hólar University.
- 2013-2017: member of the Regional Centre for Aquaculture (this centre gathers all aquaculture stakeholders including researchers, private companies, aquaculture and fisheries committees etc.).

- 2009: round table moderator for a meeting for professionals in the field of fisheries and aquaculture, Caen, France. Meeting organized by the division of agriculture and marine resources, Basse Normandie.
- 2002-2017: elected staff representative.
- 2005-2010: co-founder and vice-president of the association ETHAPP : promotion of applied ethology.

TEACHING AND TEACHING MANAGEMENT

I teach several courses from BSc to MSc levels in ethology, physiology, nutrition, anatomy, aquaculture. Teaching is given in different universities. These are both theoretical and practical courses. I also supervise compulsory projects (about 5 per year for 18 years).

I have been involved in all different teaching tasks: head of diploma, creation of new trainings/diplomas, education council, board of examiners, international expertise.

1. **MARBIO M.S**

https://ugla.holar.is/kennsluskra/index.php?tab=nam&chapter=namsleid&id=620023_20196&kenntsluar=2019

Topics in Aquatic Biology (10 ECTS)

2. **Diploma in aquaculture – Hólar University, Iceland (since 2017)**

Theory and practicum:

- Harvest and processing (6 ECTS, 100%).
- Fish health and hygiene (4 ECTS, 100%).
- Fish physiology and water quality in aquaculture (8 ECTS, 100%).

3. **United Nations University, Fisheries Training Programme (UNU-FTP) - Hólar University College, Iceland (since 2017). Head of the specialization line at HU (since 2019),**

Theory (1 week) and projects (3 months) :

- Introduction to world aquaculture.
- Water quality in aquaculture.
- Hatchery.
- On growing.
- Starting up a new farm.

4. **Higher Standard Technician in marine sciences - Biology-Fisheries-Aquaculture, INTECHMER, Cherbourg, France (2001-2017)**

Theory: (52 h)

- Nutrition and feeding of molluscs, crustaceans and fish in aquaculture.
- Anatomy and physiology of molluscs, crustaceans and fish.
- International Aquaculture.
- Ethology applied to aquatic animals.

Practical courses in anatomy (21 h)

- Dissections: bivalves, gasteropods, cephalopods, decapods crustaceans, osteichthyans and chondrychthians.

Practical courses in aquaculture

- Sea bass ongrowing (34 h)
- Culture of live preys (13 h)
- Hatchery – Recycling system technology (24 h)

5. Bachelor's degree in seafood processing and trading, INTECHMER, Cherbourg, France (2010-2014)

- Physiology: physiological functions in aquatic animals (12 h)
- Anatomy and physiology of species for sale (14 h)

6. Bachelor's degree in aquaculture (CTA) & Master's degree in aquaculture management (MEA), INTECHMER, Cherbourg and Montpellier, France (2009-2014)

- Head of this diploma.
- Participation in diploma defence evaluation.

7. Master's degree in applied Ethology, University of Paris 13, France (Since 1997)

- Fish behaviour: feeding behaviour, effects of domestication, plasticity (6 h)
- Member of the evaluation panel (Sept. 2006, 2010 and 2013).

8. Diploma in Ethology (wild and farming animals, pets), University of Rennes 1, France (since 2013)

- Participation in the programme preparation.
- Course dedicated to fish cognition (4 h, started in 2013).

COLLABORATIONS WITH INDUSTRY/EXPERTISE

Since 2001, I have developed collaborations with the aquaculture industry:

- to enhance quality of teaching (identifying gaps between current qualifications and competencies and training needs for both structured and informal learning within the industry),
- to develop applied research.

I interact with national cultural bodies and institutions for expertise and collaborations in aquaculture.

I am also involved in aquaculture expertise and teaching in Africa: Benin (since 2015), Angola (since 2016), Cameroon (since 2017).

Vocational training, government aquaculture station, Ebolova, Cameroon (2017)

The course is primarily for extension officers and people working in government who will be instrumental in promoting aquaculture in the country. The first course is planned in a government station in Ebolova with later courses in Yaounde and in Douala. I am involved in this project with two other colleagues from HUC. The courses will be as follows :

Module I: Introduction and course overview.

Module II. Farm design.

Module III: Hatchery Management – Catfish and tilapia.

Module IV: Water quality for cultured fish

Module V: Feed Management for cultured fish

Module VI. Farm Management

Module VII: Starting up a viable fish farm

BSc in Aquaculture, University of Kétou, Benin (since 2015)

At the request of the Ministry of Education and Research of Benin, I went twice to Benin to teach feeding and nutrition of molluscs, crustaceans, and fishes in aquaculture. I also conduct a thorough evaluation of the diploma and aquaculture facilities.

MSc in aquaculture, University of Luanda, Angola (2016)

At the request of the Ministry of Education and Research of Angola and in collaboration with the French embassy in Angola, I carried out an expertise mission in Angola at the veterinary faculty of Huambo and supervised, from France, the creation of a new diploma in aquaculture that should start in September 2017.