

Géraldine Fauville

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With a background in Marine Sciences and in Education, Communication and IT, my research focuses on how to improve public understanding of the importance of the ocean and other environments amidst the climate crisis. I investigate how digital technologies in the context of environmental education can contribute to experiencing, learning about and caring for the ocean.

Education

- 2013–2018 Doctoral Studies in Education, Department of Education, Communication and Learning, University of Gothenburg, Sweden.
Title: Digital technologies as support for learning about the marine environment: Steps toward ocean literacy.
- 2011–2013 Masters in Education, Communication and Information Technology, University of Gothenburg, Sweden.
Title: How can Facebook contribute to the creation of a more ocean literate society?
- 2001–2002 Masters in Sciences, Université catholique de Louvain, Belgium.
Title: Evolution of bioluminescence as an exception to the parcimony principle.
- 1997–2001 Licence en Sciences Biologiques (Bachelors of Sciences in Biology), Université catholique de Louvain, Belgium.
Title: Contribution to the study of the variability of the bioluminescence and the behavior of *Amphipholis squamata* (Echinodermata: Ophiuroidea).

Professional appointment

Wallenberg Postdoctoral Fellow Researcher - Virtual Human Interaction Lab (2018 – present), Stanford University, California, USA

- Lead the research group on virtual reality for environmental education
- Conduct a wide variety of research projects in the lab, in schools, at conferences, with remote data collection sites all around the country and abroad, and in a swimming pool
- Initiated research partnership with organizations and companies such as NatureBridge and Ballast
- Learn quantitative statistical methods by auditing several Stanford classes and running quantitative studies

Education Project Manager – I2SEA, I2I and Virtual Marine Scientist (2008-2018, part-time), Stanford University/University of Gothenburg, Sweden

- Lead a team of 5 people developing online marine environmental science instructional materials for middle and high school students around the world

- Conducted research involving 100s of middle and high school students and teachers in the U.S. and Sweden, and online with students from 15 countries and adults
- Promote users' growth by advocating for our project materials and teaching outcomes to various audiences from policy makers to classroom teachers and education researchers
- Work in the classroom with teachers and students to implement our learning materials

European Project Co-Leader – Sea Change & Sea for Society (2015-2017 & 2012-2015, part-time), University of Gothenburg, Sweden

- Co-lead 2 pan-European projects consisting respectively of 17 and 28 partner organizations in 7 and 12 countries promoting public understanding of the ocean
- Manage international & remote teams developing teaching materials (e.g., iBook), organizing outreach events (e.g., CoderDojo Challenge) & running professional development (e.g., MOOCs)
- Organize, run and analyze outcomes from 6 consultations and workshops with various participants such as students; education, science and industry stakeholders; and policy makers

Visiting Scholar (2015-2016), Graduate School of Education, University of California, Berkeley

- Designed an inquiry-based learning resource on loss of biodiversity
- Led classroom research on how to promote collaboration between students through instruction

Visiting Scholar (2015-2016), Lawrence Hall of Science, University of California Berkeley

- Coordinate the community-based development of an international survey measuring citizens' understanding of the ocean available in 17 languages and taken by more than 7,500 users

Summer Associate (2012), Monterey Bay Aquarium Research Institute (MBARI)

- Investigated, implemented and tested different social media (Facebook and Twitter) strategies
- Published results in high impact peer-reviewed journal

Informal Education Program Coordinator (2003), Natagora, Belgium

- Managed a Citizen science project with youth in order to estimate the population of *Cricetus cricetus* (wild hamster) in the Belgian crop fields
- Coordinated an outreach project organizing family events to promote awareness about bats.

Publications

Articles

- Fauville, G., Strang, C., Cannady, M., & Chen, Y.F.** (2019). Development of the International Ocean Literacy Survey: measuring knowledge among 16-18 year olds across the world. *Environmental Education Research, 25*(2), 238-263.
- Fauville, G., McHugh, P., Domegan, C., Mäkitalo, Å., Friis Møller, L., Papathanassiou, M., Alvarez Chicote, C., Lincoln, S., Batista, V., Copejans, E., Crouch, F., & Gotensparre, S.** (2018). Using collective intelligence to identify barriers to teaching 12-19 year olds about the ocean in Europe. *Marine Policy, 91*, 85-96.
- Fauville, G.** (2017). Questions as indicators of ocean literacy: Students' online asynchronous discussion with a marine scientist. *International Journal of Science Education, 39*(16), 2151-2170.
- Fauville G., Dupont S., von Thun S., & Lundin, S.** (2015). Can Facebook be used to increase scientific literacy? A case study of the Monterey Bay Aquarium Research Institute Facebook page and ocean literacy. *Computers & Education, 82*, 60-73.
- Fauville, G., Copejans, E., & Crouch, F.** (2013). European marine educators, unite! Europe's quest for a more ocean-oriented society and economy. *The Marine Biologist, 1*, 30-31.
- Fauville G., Lantz-Andersson A., & Säljö R.** (2013). ICT tools in environmental education – reviewing two newcomers to schools. *Environmental Education Research, 20*(2), 248-283.
- Copejans E., Crouch F., & **Fauville G.** (2012). The European Marie Science Educators Association (EMSEA): Towards a more ocean literate Europe. *Current: The journal of marine education, 28*(2), 43-46.
- Fauville G., Säljö R., & Dupont S.** (2012). Impact of ocean acidification on marine ecosystems: educational challenges and innovations. *Marine Biology, 160*(8), 1863-1874.
- Stach T., Dupont S., Israelsson O., **Fauville G.**, Nakano H., & Thorndyke M. (2005). Nerve cells of *Xenoturbella bocki* and *Harrimania kupfferi* (Enteropneusta) react positive with antibodies raised against echinoderm neuropeptides. *Journal of Marine Biology Ass. U.K.* 85(6), 1519- 1524.

Book chapters, books

- Fauville, G., Queiroz, A. C., & Bailenson, J. N.** (2020). Virtual reality as a promising tool to promote climate change awareness. In J. Jim, & H. Song (Eds.), *Technology and Health: Promoting Attitude and Behavior Change*. Elsevier.
- Fauville, G.** (2019). Ocean Literacy in the twenty first century. In G. Fauville, D. Payne, M. Marrero, A. Lantz-Andersson, & F. Crouch (Eds.), *Exemplary Practices in Marine Science Education: A Resource for Practitioners and Researchers*. Cham, Switzerland: Springer.

- Fauville, G., Payne, D., Marrero, M., Lantz-Andersson, A., & Crouch, F. (Eds.). (2019).** *Exemplary Practices in Marine Science Education: A Resource for Practitioners and Researchers*. Cham, Switzerland: Springer.
- Lantz-Andersson, A., **Fauville, G.**, Edstrand, E. & Säljö, R. (2019). Concepts, materiality and emerging cognitive habits: The case of calculating carbon footprints for understanding environmental impact. In Å. Mäkitalo, T. E. Nicewonger, & M. Ela (Eds.), *Designs for digital experimentation and inquiry: Approaching learning and knowing in digital transformation*.
- Dupont, S., & **Fauville, G.** (2017). Ocean literacy as a key toward sustainable development and ocean governance. In P. Nunes, L.E. Svensson, & A. Markandya (Eds.), *Handbook on the Economics and Management of Sustainable Oceans*. Cheltenham, UK: Edward Elgar Publishers & UNEP.
- Fauville, G.**, Lantz-Andersson, A., Mäkitalo, Å., Dupont S. & Säljö, R. (2016). Digital media as cultural tools: Understanding of and responding to climate change. In O. Erstad, S. Jakobsdottir, K. Kumpulainen, Å. Mäkitalo, P. Pruihlmann-Vengerfeldt, & K. Schröder (Eds.), *Learning Across Contexts in the Knowledge Society*. Rotterdam: Sense Publishers.
- Fauville, G.**, Hodin J., Dupont S., Miller P., Haws J., Thorndyke M., & Epel D. (2011). Virtual ocean acidification laboratory as an efficient educational tool to address climate change issues. In W. Leal Filho (Ed.), *The Economic, Social and Political Elements of Climate Change*. Berlin: Springer.

Conference proceedings

- Queiroz, A., **Fauville, G.**, Herrera, F, Leme M. I., Bailenson, J. (2020). Immersion and learning: Cognitive and non-cognitive outcomes of immersive virtual reality learning experiences. *International Communication Association Conference*, Gold Coast, Australia.
- Chen, Y.-F., Cannady, M. A., **Fauville, G.**, & Strang, C. (2020). Working toward an international assessment of ocean literacy: Validating instrument with Rasch measurement model. *American Educational Research Association (AERA) annual meeting*, San Francisco, CA.
- Fauville, G.**, Lantz-Andersson, A., & Säljö, R. (2012). *International student Carbon Footprint Challenge – Social media as a content and language integrated learning environment*. Eurocall 2012 Conference: CALL: using, learning, knowing, Gothenburg 22-25 August, 2012.
- Fauville G.**, Dupont S., & Mallefet J. (2003). Comparison of mechanically and chemically induced luminescence in the brittle star *Amphipholis squamata*. *Proceedings of the 6th European Conference on Echinoderm Research*. Banyuls-sur-mer: France.

Reports

Santoro F., Santin S., Scowcroft G., **Fauville** G., Tuddenham P. (2017). *Ocean literacy for all: Learning kit*. Venice, Italy: UNESCO.

Garcia-Soto, C., van der Meeren, G. I., Busch, J. A., Delany, J., Domegan, C., Dubsky, K., **Fauville**, G., Gorsky, G., von Juterzenka, K., Malfatti, F., Mannaerts, G., McHugh, P., Monestiez, P., Seys, J., Węslawski, J.M. & Zielinski, O. (2017). Advancing Citizen Science for Seas and Ocean Research. In French, V., Kellett, P., Delany, J., & McDonough, N. (Eds.) *Position Paper 23 of the European Marine Board*. Ostend, Belgium: European Science Foundation.

Gotensparre, S.M., **Fauville**, G., McHugh, P., Domegan, C., Mäkitalo, Å. & Crouch, F. (2017). *Meta-analysis of the consultation reports*. Plymouth: Sea Change Project.

Donert, K., **Fauville**, G., Gotensparre, S., Mäkitalo, Å., Van Medegael, L., Zwartjes, L. (2015). *Review of marine formal education*. EU Sea Change Project.

Thesis

Fauville, G. (2017). *Digital technologies as support for learning about the marine environment: Steps toward ocean literacy*. Doctoral thesis. University of Gothenburg, Sweden

Conference Presentations 2014-present (*presenter)

***Fauville**, G., Queiroz, A., Bailenson, J. (2019). *How can virtual reality promote sustainability?* Paper presented at the Stereopsia Conference, Brussels, Belgium

*Strang, C., ***Fauville**, G., Cannady, M. (2019). *The International Ocean Literacy Survey: Update from Version 4*. Paper presented at the National Marine Educators Association Conference. Durham, NH.

***Fauville**, G., Queiroz, A., Bailenson, J. (2019). *Virtual Reality for Marine Education*. Paper presented at the National Marine Educators Association Conference. Durham, NH.

2018

Fauville, G., *Cannady, M., & *Strang, C. (2017). *International Ocean Literacy Survey*. Paper presented at the European Marine Educators Association Conference. Valetta, Malta.

Fauville, G., Martinez-Garza, M., Vitale, J., & *Linn, M. (2017). *Collaborative predictions during inquiry learning: individual or joint?* Paper presented at the European Science Education Research Association. Dublin, Ireland.

***Fauville**, G. (2017). *Promoting ocean literacy through computer-based technologies*. Paper presented at the National Marine Educators Association Conference. Charleston, SC.

***Fauville**, G., *Cannady, M., & *Strang, C. (2017). *International Ocean Literacy Survey*. Paper presented at the National Marine Educators Association Conference. Charleston, SC.

- Miller, P., *Fauville, G., & Hodin, J. (2017). *I2SEA, an international project promoting climate and ocean literacy*. Paper presented at the National Marine Educators Association Conference. Charleston, SC.
- Fauville, G.,** Martinez-Garza, M., Vitale, J., & *Linn, M. (2017). *When to collaborate during inquiry activities: while predicting or after making individual predictions?* Paper to be presented at the American Educational Research Association Annual Meeting. San Antonio, TX.
- *Strang, C., & *Fauville, G. (2016). *Communicating ocean science for informal education course launched in Europe*. Paper presented at the European Marine Science Educations Association conference. Belfast, Northern Ireland.
- *Fauville, G., Hodin, J., Miller, P., Dupont, S., Epel, D., & Säljö, R. (2016). *Inquiry to student environmental action*. Paper presented at the European Marine Science Educations Association conference. Belfast, Northern Ireland.
- *Fauville, G., *Cannady, M., & *Strang, C. (2016). *International Ocean Literacy Survey*. Paper presented at the European Marine Science Educations Association conference. Belfast, Northern Ireland.
- *Fauville, G., Marrero, M., Lantz-Andersson, A., Crouch, F., & Payne, D. (2016). *Exemplary Practices in Marine Science Education - A Resource for Practitioners and Researchers*. Poster presented at the European Marine Science Educations Association conference. Belfast, Northern Ireland.
- *Fauville, G., *Cannady, M., & *Strang, C. (2016). *International Ocean Literacy Survey*. Paper presented at the National Marine Educators Association Conference. Orlando, FL.
- *Fauville, G., & Strang, C. (2016). *Sea Change: Progress and way forward*. Paper presented at the National Marine Educators Association conference, Orlando, FL.
- *Miller, P., Hodin, J., **Fauville, G.,** Epel, D., Säljö, R., & Dupont, S. (2016). *"To do is to learn" and isn't learning about climate change essential to impart to our students?* Paper presented at the National Marine Educators Association conference, Orlando, FL.
- Hodin, J., *Fauville, G., Miller, P., Epel, D., Säljö, R., & Dupont, S. (2016). *"With these actions you can improve the world": Empowering students with innovative learning resources for climate change and ocean acidification*. Poster presented at the National Marine Educators Association conference, Orlando, Florida. USA.
- *Fauville, G., Hodin, J., Miller, P., Dupont, S., Epel, D., & Säljö, R. (2015). *An international project promotion climate and ocean literacy*. Paper presented at the National Marine Educators Association Conference. Newport, RI.
- *Fauville, G., *Lantz-Andersson, A., & Säljö, R. (2015). *"I was shocked and embarrassed at the results" Carbon Footprint calculators as mediators of tangible information and as resources for knowing and reasoning about emissions*. Paper presented at the International Conference on Computer Supported Collaborative Learning. Gothenburg, Sweden.
- *Fauville, G., & *Copejans, E. (2015). *Ocean Literacy and European campaign*. Presented at the European Parliament.

- ***Fauville, G.** (2014). *Communication training for scientists*. Presented at the Sea for Society Academy. Lisbon, Portugal.
- ***Fauville, G., & *Crouch, F.** (2014). *From NMEA to EMSEA. The European ocean literacy experience*. Paper presented at the National Marine Educators Association conference, Annapolis, MD.
- ***Gotensparre, S., & *Fauville, G.** (2014). *Marine outreach and education at the University of Gothenburg, Sweden*. Paper presented at the National Marine Educators Association conference, Annapolis, MD.
- ***Fauville, G., Lantz-Andersson, A., & Säljö, R.** (2014). *Digital media as cultural tools: Understanding of and responding to climate change*. Paper presented at the Next Generation Learning Conference. Falun, Sweden.
- ***Fauville, G.** (2014). *Ocean Literacy in Europe and beyond*. Presented at the NOAA online workshop to advance transatlantic ocean literacy.

Invited Speaker

- 2020 International Conference on Global Education, Brussels, Belgium
- 2019 Asia Marine Educator Association Conference (keynote speaker), Quindao, China
- 2019 UNESCO 2019 Forum on Education for Sustainable Development and Global Citizenship (panelist), Ha Noi, Vietnam
- 2019 PhD conference at the University of Gothenburg Science Faculty, Sweden
- 2019 The EARTH Teacher Program, Monterey Bay Aquarium Research Institute, USA
- 2017 Sea and Society Talk, University of Gothenburg, Sweden.
- 2017 Department of Education, University of Vigo, Spain.
- 2016 Graduate School of Education Colloquium, UC Berkeley, USA.
- 2016 European project Green Bubbles workshop, Italy.
- 2015 National Marine Educators Association (panelist), RI, USA.
- 2014 Faculty of Education, Hong Kong University, Hong Kong.
- 2013 Nordic Marine Science Conference (keynote speaker), Norway.
- 2012 3rd Symposium on the Ocean in a High-CO₂ World (panelist), Monterey, CA

Service to profession

- 2019 - present Ambassador for XR4ALL.
- 2017 - present Member of the Advisory Board of the Asia Marine Educators Association.
- 2015 - present Co-leader of the design and development of the International Ocean Literacy Survey.
- 2015 - 2018 Lead editor of the book “Exemplary Practices in Marine Science Education - A Resource for Practitioners and Researchers” to be published by Springer.

- 2016 - present Director of the European Marine Science Educators Association (EMSEA).
- 2015 - present Director of the National Marine Educators Association (NMEA).
- 2015 - present Chair of the NMEA International Committee.
- 2014 Chair of the organizing committee and host for the 2nd European Marine Science Educators Association Annual Conference.
- 2013 - 2018 Member of the organizing committee for the annual European Marine Educators Association Annual Conferences (Plymouth, Gothenburg, Crete, Belfast, Malta).
- 2013 - 2018 Member of LinCS at the University of Gothenburg.
- 2013 - 2016 Member of the Advisory Board of the public aquarium Havets Hus.
- 2013 - 2015 Member of the expert group on “Defining an ocean literacy agenda for Horizon 2020 & transatlantic cooperation” requested by the European Commission.
- 2011 - present Member of the LETStudio, a strategic initiative for promoting interdisciplinary research within the Learning Sciences at the University of Gothenburg.
- 2011 - present Co-founder of the European Marine Science Educators Association (EMSEA: <http://www.emsea.eu>).
- 2010 - 2016 Member of the European Marine Board Communication Panel (EMBCP).

Journal reviewer

Computers & Education

Current: The Journal of Marine Education

Energy Research & Social Science

Environmental Education Research

EURASIA Journal of Mathematics, Science and Technology Education

International Journal of Science Education

Regional Studies in Marine Science

Curriculum Development

Loss of Ocean Biodiversity. Lesson created for Web-based Inquiry Science Environment (WISE).

Our Acidifying Ocean. Lesson investigates the causes and chemistry of ocean acidification and allows students to conduct a virtual lab on the impact of ocean acidification on sea urchin larvae development.

Impact of Ocean Acidification on Marine Species and Ecosystems. Lesson created on VoiceThread expanding on the Our Acidifying Ocean to consider broader biological, cultural and economic implications of ocean acidification and climate change.

Virtual Marine Scientist. Lesson allowing students to develop their own research questions related to climate change and ocean acidification, formulate their hypothesis and apply for "funding" to investigate them in a virtual laboratory.

Carbon Footprint Calculator allows users to measure their personal impacts on climate change by answering a series of questions addressing the student lifestyle.

International Carbon Footprint Challenge. Lesson using an online social learning platform that engages students in meaningful and in-depth international conversations about carbon footprints and possible solutions to shared environmental problems.

Teaching Experience

- 2020 French tutor for children (neurotypical and on the autism spectrum)
- 2018 - 2020 Guide of the Virtual Human Interaction Lab for more than 200 persons such as children, high school students, college students, general public, corporate staff and high ranked military officials
- 2019 Invited speaker for the Psychological Insight for Science Communication course, Stanford University
- 2018 Leader and evaluator, Reading seminar, University of Gothenburg
- 2016 Evaluator, Communicating Climate Change university course, University of California, Berkeley
- 2016 Co-presenter, Collecting Data and Analyzing Results workshop. NMEA Conference, Florida, USA.
- 2015 - 2016 French tutor for adults and children in California.
- 2015 Co-teacher, Communicating Ocean Sciences Instructors workshop. Sweden.
- 2015 Co-leader, Communicating Climate Change university two-day course. Alfred Wegener Institute. Germany.
- 2014 Co-teacher, Marine Evolution under Climate Change, University of Gothenburg, Sweden.
- 2014 Organiser of elementary school students' visit to the Sven Lovén Centre for Marine Sciences at the University of Gothenburg, Sweden
- 2013 Co-teacher, Biotechnology professional development workshop for high school teachers. University of Gothenburg, Sweden.
- 2013 Co-teacher, The Linnaeus Centre for Marine Evolutionary Biology course, University of Gothenburg, Sweden.

Students' supervision

- 2018 - 2020 Eight undergraduate students helping research projects for course credit, Stanford University
- 2019 Summer Interns, Stanford University, USA
- 2016 Summer Intern, University of California Berkeley, USA.
- 2016 Model teaching of outreach activities for the public. Lawrence Hall of Science, University of California, Berkeley.
- 2012 Master of Science student in Biology, University of Gothenburg, Sweden.
- 2002 Undergraduate student in Biology, Université catholique de Louvain, Belgium

Public Outreach

- 2020 VR Illuminates Effects of Climate Crisis, Maui News Paper
- 2020 Joined the Ocean Conservancy Team to bring marine education to the public through virtual reality at the Super Bowl Liv Event, Miami
- 2019 Virtual Reality booth at the Planetary Health Conference, Stanford University,
- 2019 Marine Biologist Dives Deep into Virtual Reality, Modern Education Podcast and KZSU Stanford Radio
- 2019 Stanford SciCast, Sea-ing the Environment: Virtual Reality and Ocean Education, Stanford University
- 2019 Virtual Reality Booth at the Night by the Bay Event, Exploratorium, San Francisco
- 2019 Virtual Reality for the Ocean, Expert Panel. The Battery, San Francisco, California
- 2018 Stanford Takes Students on Virtual Underwater Journey. NBC Bay Area News, California
- 2017 Video interview about gender equity and women in marine careers, University of Vigo, Spain
- 2017 Booth at the Universeum for World Ocean Day, Take a Pledge for the Ocean, Gothenburg, Sweden
- 2017 How Can Ed Tech Help Save the Ocean? Blog post
- 2013 Interviewed for local TV news regarding implementing digital technologies for science learning in high schools in Sweden
- 2012 Participant as role model for a Girl in Science program, Monterey, California
- 2012 Presentation at the Annual Journalist Seminar, University of Gothenburg, Sweden

2012 Interviewed for the University of Gothenburg TV regarding implementing digital technologies for science learning in high schools in Sweden

Awards

2018 Stipendiefonden till Eva Selin Lindgrens Minne
2017 The Adlerbert Scholarships
2015 Bo Samuelsson PhD Exchange Program at UC Berkeley

Funding

2019 National Science Foundation (AISL), Advancing Ocean Literacy through Immersive Virtual Reality, Co-applicant (\$ 300 000)
2018 The Wallenberg Foundation Postdoctoral Scholarship Program at Stanford University, Sole applicant (SEK 1 670 000)
2018 The Swedish Research Council, International postdoc, Sole applicant (SEK 2 100 000). I declined this grant as I accepted the Wallenberg one for the same postdoc.
2015 Horizon 2020, Sea Change, Co-applicant (SEK 35 000 000)
2015 The Knut och Alice Wallenberg Foundation, Inquiry to Students Environmental Action, Co-applicant (SEK 2 500 000)
2011 The Knut och Alice Wallenberg Foundation Virtual Marine Scientists Wallenberg, Co-applicant (SEK 1 900 000)

Languages

French: Native
English: Fluent
Swedish: Fluent