Dr. Ana Samperiz **CV**
Post-Doctoral Research Associate
Florida State University
Department of Earth, Ocean, & Atmospheric Science
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Research interests

- Understanding biogeochemical mechanisms of calcification in marine calcifiers, and their response to environmental changes.
- Development and application of geochemical and sclerochronological proxies for paleoclimatology and a better understanding of marine ecosystems.

Education

2018 – 2023 **Ph.D. School of Earth and Environmental Sciences**, Cardiff University.
Thesis: *Sclerochronological and geochemical records from Porites spp. in Fiji: Assessing massive coral response to environmental changes.* Supervisors: Dr. Sindia Sosdian, Dr. Eleanor John, Dr. Erica Hendy, Dr. Kenneth Johnson, Dr. Stacy Jupiter.

2016 – 2018 **MSci by Research in Earth Sciences,** University of Bristol.
Thesis: *Stylasterid corals: A new paleoceanographic archive?*
Supervisor: Prof. Laura Robinson.

2009 – 2015 **BSc Environmental Sciences**, Universidad de Zaragoza.
Thesis: *Design, implementation, and evaluation of an Environmental Education Program in a summer camp.* Supervisor: Dr. Juan Herrero.

Professional experience

2024 – present **Research Associate; Dean's Postdoctoral Fellow.** Florida State University, Department of Earth, Ocean, and Atmospheric Science. Supervisor: Dr. Alyssa Atwood
- Reconstruction of ENSO events in the central Pacific over the Holocene and investigate coral biomineralization pathways using geochemical proxies.
- Training and overseeing students and research assistants.
- Instructor of Record: Current Issues in Environmental Science.

2023 – 2024 **Research Associate in Trace Elemental Geochemistry.** School of Earth and Environmental Sciences, Cardiff University. Supervisors: Dr. Edward Inglis and Dr. Morten Andersen.
- Set-up spatial analytical techniques (LA-ICPMS mapping) for high-precision trace and minor elemental measurements on a range of marine and silicate samples.
- Trouble shooting and fault-finding of laboratory instruments.
- Training and overseeing students and LA-ICPMS users at CELTIC facilities.
- Laser Safety Deputy Officer.

2016 – 2018 **Research Analyst in Marine Geochemistry.** School of Earth Sciences, University of Bristol. Supervisor: Prof. Laura Robinson.
- Mechanical and chemical preparation of marine carbonate samples for AMS and U/Th MC-ICPMS (solution and LA) analyses.
- Curation of marine samples and maintenance of the sample collection database.

Teaching experience

Instructor of Record/Lecturer

Florida State University

Fall 2024	"Current Issues in Environmental Science" (OCE4017/OCE5018; 91 students): designed and taught a core course for Environmental Science, and Environmental Policy undergraduate majors and minors, and Environmental Science graduate students.

Student supervision

Florida State University

2025	Ms Neda Mobasher: MSc research dissertation "Assessing the validity of the coral Sr-U paleothermometry technique in the Galápagos Islands, Ecuador". Co-supervisor.

Cardiff University

2021	Mr Jacob Lloyd Newman: MSci research dissertation "Potential drivers of bioerosion in massive *Porites* on an inshore reef in Fiji". Co-supervisor.

Teaching assistant

Cardiff University

2022	Marine Environmental Systems.
2021	Coral Reefs.
2020, 2021	Biogeochemistry.
2019	Earth surface processes.

Awards and Grants

2019	**RCUK Student Travel Grant**, Reef Conservation UK. £250 to cover travel expenses to assist to the RCUK 2019 meeting.
2019	**International Sclerochronology Conference**, Best Student Poster.
2019	**Hazel Prichard Impact Prize**, School of Earth and Ocean Sciences, Cardiff University. £500 to support the implementation of the outreach activity "REEFsistence".
2018	**NERC GW+4 Doctoral Training Programme**, Cardiff University. £80,000 to carry out research leading to acquisition of a doctoral degree.
2017	**NERC Isotope Geosciences Facilities Grant Application**. To cover the analysis of marine carbonate samples for stable oxygen and carbon isotopes measurements.
2017	**Alumni Foundation Award**, University of Bristol. £1,000 to support the outreach program "Rock Wow Days".
2015	**Best 4th Year thesis Award**, Escuela Politécnica Superior, Universidad de Zaragoza.

Publications

Published

- Cook, N. D., **Samperiz, A.**, Andersen, M., Inglis, E., Millet, M., Cable, J., Perkins, S. E. 2025. Vertebral elemental composition reveals ontogenetic changes in habitat use in a Northeast Atlantic mesopredator shark. *Estuarine, Coastal and Shelf Science*, 109255. doi:10.1016/j.ecss.2025.109255.
- Liu, Q., Robinson, L., Hendy, E., Prokopenko, M. G., Stewart, J. A., Knowles, T. D. J., Li, T., **Samperiz, A.** 2023. Reinterpreting radiocarbon records in bamboo corals – New insights from the tropical North Atlantic. *Geochimica et Cosmochimica Acta*, 348: 296-308. doi: 10.1016/j.gca.2023.03.019.
- Kershaw, J., Stewart, J. A., Strawson, I., de Carvalho Ferreira, M. L., Robinson, L. F., Hendry, K. R., **Samperiz, A.**, Burke, A., Rae, J. W. B., Day, R. D., Etnoyer, P. J., Williams, B., Häussermann, V. 2023. Ba/Ca of stylasterid coral skeletons records dissolved seawater barium concentrations. *Chemical Geology*, 121355. doi:10.1016/j.chemgeo.2023.121355.

- Li, T., Robinson, L., Chen, T., Wang, X., Burke, A., Rae, J., Pegrum-Haram, A., Knowles, T., Li, G., Chen, J., Ng, HC., Prokopenko, M., Rowland, G., **Samperiz, A.**, Stewart, J., Southon, J., Spooner, P. 2020. Rapid shifts in circulation and biogeochemistry of the Southern Ocean during deglacial carbon cycle events. *Science Advances*, 6:42. doi:10.1126/sciadv.abb3807.
- **Samperiz, A.**, Robinson, L., Stewart, J., Strawson, I., Leng, M., Rosenheim, B., Ciscato, E., Hendry, K., Santodomingo, N. 2020. Stylasterid corals: a new paleotemperature archive. *Earth and Planetary Science Letters*, 545:116407. doi:10.1016/j.epsl.2020.116407.
- Stewart, J., Robinson, L., Day, R., Strawson, I., Burke, A., Rae, J., Spooner, P., **Samperiz, A.**, Etnoyer, P., Williams., B., Paytan, A., Leng, M., Häussermann, V., Wickes, L., Bratt, R., Pryer, H. 2020. Refining trace metal temperature proxies in cold-water scleractinian and stylasterid corals. *Earth and Planetary Science Letters*, 545:116412. doi:10.1016/j.epsl.2020.116412.
- Hendry, K., Huvenne, V., Robinson, L., Annett, A., Badger, M., Jacobel, A. Ng, HC., Opher, J., Pickering, R., Taylor, M., Bates, S., Cooper, A., Cushman, G., Goodwin, C., Hoy, S., Rowland, G., **Samperiz, A.**, Williams, J., Achterberg, E., Arrowsmith, C., Brearley, A., Henley, S., Krause, J., Leng, M., Li, T., McManus, J, Meredith, M., Perkins, R., Woodward, M. 2018. The biogeochemical impact of glacial meltwater from Southwest Greenland. *Progress in Oceanography*, 176:102126. doi:10.1016/j.pocean.2019.102126.
- **Samperiz, A.** and Herrero, J. 2018. Evaluation of a summer camp environmental education program in Spain. *Applied Environmental Education & Communication*, 17(1), 79-90. doi:10.1080/1533015X.2017.1366881.

Submitted/In preparation

- **Samperiz, A**, Sosdian, S., Hendy, E., Johnson, K., John E. H., Jupiter S. D., Albert S. Coastal seawater turbidity and thermal stress control growth of reef-building *Porites* spp. corals in Fiji. (*Under review – Scientific Reports*).
- **Samperiz A.**, Sosdian, S., John E. H., Hendy, E., Jupiter S. D., Johnson, K. Overcoming growth effects in Fijian corals for the application of trace element paleothermometry. (*In preparation)*.

Selected presentations

(Poster)	**Samperiz, A**., Sosdian, S., Hendy, E., John, E. H., Johnson, K. G., Jupiter, S. D. *Environmental controls and growth effects on trace element composition of coral aragonite: Application of paleothermometry proxies in Fijian massive Porites spp.* (Abstract 18559). Goldschmidt, July 2023.
(Invited Talk)	**Samperiz, A.** Sosdian, S., Hendy, E., John, E. H., Johnson, K. G., Jupiter, S. D. *Overcoming growth effects in Fijian massive Porites spp. for the application of trace element paleothermometry.* Topical Meeting of the DFG Priority Programme "Tropical Climate Variability & Coral Reefs" (SPP 2299), May 2023.
(Poster)	**Samperiz, A**., Sosdian, S., Hendy, E., John, E. H., Johnson, K. G., Jupiter, S. D. *Can environmental changes be linked to coral calcification in Fijian inshore reefs?* (A-1902). International Coral Reef Symposium (ICRS), July 2022.
(Talk)	**Samperiz, A**., Sosdian, S., Hendy, E., John, E. H., Johnson, K. G., Jupiter, S. D. *Trace element LA-ICPMS analysis of Porites corals from Fiji as indicators of coastal water quality and climatic events.* Geochemistry Group Research in Progress (GGRiP), May 2022.
(Invited Talk)	**Samperiz, A.**, Robinson, L. *Small but mighty: The potential of stylasterid corals as paleoceanographic archives.* International Fossil Coral and Reef Society (IFCRS) Early Career Researcher symposium, October 2021.
(Invited Talk)	**Samperiz, A.**, Robinson, L. *Small but mighty: The potential of stylasterid corals as paleoceanographic archives.* Sclerochronology Group, University of Exeter, April 2021.

(Poster)	**Samperiz, A**., Sosdian, S., Hendy, E., John, E. H., Johnson, K. G., Jupiter, S. D. Linking environmental changes and coral calcification in Fijian inshore reefs using computed tomography. Reef Conservation UK (RCUK), December 2019.
(Poster)	**Samperiz, A.**, Robinson, L. F., Leng, M. J., Stewart, J., Rosenheim, B. E., Santodomingo, N., Stylasterids: a new paleoceanographic archive? International Sclerochronology Conference (ISC), June 2019
(Invited talk)	**Samperiz, A.**, *Environmental Education in non-formal teaching settings.* Guest Lecturer for Environmental Education, University of Zaragoza – January 2016.

Research experience

- **Laser Ablation** (LA). Sample analysis, methods development and operating, maintaining, and troubleshooting a RESOlution-SE 193nm ArF excimer, NWR-213, ESL ImageGeo193, and Teledyne Iridia laser systems.
- **Inductively Coupled Plasma-Mass Spectrometry** (ICP-MS and ICP-MS/MS) and Time-Of-Flight (TOF-ICP-MS). Operating, maintenance and troubleshooting of Agilent 8900 QQQ, iCAP RQ, Element XR and Vitesse instruments (both for solution analysis and in tandem with the LA system).
- **Trace element analyses**: Spot, transect and imaging of trace and minor elements in biogenic carbonates and silicate minerals with both LA-ICP-MS and solution methods.
- ***In situ* Rb/Sr dating** of metamorphic rocks using LA-ICP-MS/MS.
- **Computed Tomography** (CT): Data acquisition and processing of 3-dimensional datasets. Operating GE phoenix v|tome|x s240 and Nikon Metrology HMX ST 225.
- **Sample characterisation** (diagenesis and mineralogy): SEM, SEM-EDS, XRD, XRF.
- **Coral morphological identification** in Stylasteridae and Scleractinia up to species level.
- **Laboratory management**: General lab upkeep, experience working and maintaining chemistry clean laboratory facilities, user and visitor training and over-seeing.
- **Coral sampling**: Coring of living and fossil shallow-water coral using pneumatic and Pomeroy drill, ROV/submersible for collection and sampling of deep-sea living and fossil specimens.
- **Seawater sampling**: Deployment and recovery of CTD-rosette and surface sampling for trace elemental, carbonates, pH, stable isotopes, and nutrient measurements.
- **Sediment sampling**: Use of push corers, gravity corers, and multi-corers for recovery of deep-sea sediment cores. Core processing and sub-sampling.
- **Field experience**: Planning, leading and participating in shallow-water and coastal field work in Fiji (2019, Project COACTION, team member), and Galápagos (2024, team member), and deep-sea oceanographic expeditions in the Labrador Sea (2017, Project ICY-LAB, DY081, team member) and Galápagos (2023, Project GALÁPAGOS DEEP, AT050-09, team leader).
- **Programming languages and software**: R (statistical analysis, data handling and visualization), Python (data handling and visualization), QGIS, iolite4, Avizo, FIJI, Dragonfly.

Selected outreach activities, media and community contributions

Outreach

2024 – present	**Coral geochemistry** – Outreach activity aimed towards adults and young adults. Implemented on FSU and MagLab Open Days (US).
2021 – present	**Being a coral detective** – Outreach workshop aimed towards Secondary Schools. Implemented in primary and secondary education centres in South Wales and Wiltshire (UK) and Huesca (Spain).
Nov 2023	**Techniquest Over-50s Science Café** – Outreach activity about coral reefs and ocean archives held at Techniquest Museum for adults.

Jul 2023 **Festival of Nature** – Outreach activity about coral reefs held at St Fagans Museum of Natural History, Cardiff (UK) aimed at public of diverse ages.

Feb 2023 **11F International Day of Women in STEM**. Member of the panel and round-table debate discussing women in STEM in rural areas, Almudevar (Spain).

Media and public webinars

2022 **Geotalks** – School of Earth and Environmental Sciences, Cardiff University: "Tales from the Reef: The impact of environmental changes in corals"

2021 **Noosfera podcast**: "¿El fin de los corales?"

2020 **European Researcher's Night** – Geological Society of London: "Meet an Earth Scientist: Paleoceanography"

2020 **Nos vamos de podcast**: "Sobre arrecifes de coral y cambio climático"

Community contributions

2022 – present **Peer reviewer** for scientific journals: Paleoceanography and Paleoclimatology, PLOS ONE, Biogeosciences, and Journal of Geophysical Research – Oceans.

2022 **Co-organiser: 2023 Geochemistry Group Research in Progress (GGRiP)**, Cardiff, UK.

2021 **Organiser: EARTH 3-minute talks**. Organise bi-monthly seminar series for graduate students at the School of Earth and Environmental Sciences, Cardiff University, to promote their work and promote department's research culture.