Johan RENAUDIE
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born in Sarlat-la-Canéda (France), July the 26th, 1983
ORCID: 0000-0002-9107-1984

EDUCATION

2013 Promotion (PhD) in Biology (Paleontology) at Humboldt-Universität, Berlin, Germany.

2007 Master (MSc) in Systematic, Evolution and Paleontology at Université Pierre et Marie Curie (UPMC) coaccredited with Museum National d'Histoire Naturelle and École Normale Supérieure, Paris, France.

2004 Licence (BSc) in Earth and Space Sciences at Université Paul Sabatier, Toulouse, France.

2003 DEUG in Earth and Universe Sciences at Université Paul Sabatier, Toulouse, France.

2001 Baccalauréat in Science (Mathematics) at Lycée Pré de Cordy, Sarlat-la-Canéda, France.

RESEARCH EXPERIENCE

2018–22 PostDoc research project (DAAD MOPGA-GRI grant 57429681) at the Museum für Naturkunde (MfN) with G. Asatryan and D.B. Lazarus on 'Polar Paleogene Plankton and Productivity'.

2015–17 PostDoc research project (DFG grant RE3470/3-1) at MfN on 'Diatoms, Radiolarians and the Cenozoic Silicon and Carbon cycles'.

2014–15 PostDoc research project at MfN with D.B. Lazarus and H. Pälike on 'Earthtime-EU: Integrated deep-sea microfossil chronostratigraphic database, website and analytic tools'.

2008–12 PhD research project (DFG grant LA1191/8-1,2) at MfN with D.B. Lazarus and B. Mohr on a 'Synthesis on Antarctic Neogene radiolarians: taxonomy, macroevolution and biostratigraphy'.

2007 MSc research project at UPMC with T. Danelian and S. Saint-Martin on 'Siliceous plankton paleoecology in the tropical Atlantic in relation with Middle Eocene climatic changes'.

2006 MSc research project at UPMC with T. Danelian on 'Radiolarian diversity and taphonomy during the critical warming interval of the Paleocene-Eocene boundary'.

FIELDWORK

2019 IODP Leg 379 'Amundsen Sea West Antarctic ice-sheet history': Shipboard radiolarian specialist.

PUBLICATIONS

2023 Smith J., Rillo M., Kocsis A., Dornelas M., Fastovich D., Huang H.-H.M., Jonkers L., Kiessling W., Li Q., Liow L.-H., Margulis-Ohnuma M., Meyers S., Na L., Penny A.M., Pippenger K., Renaudie J., Saupe E., Steinbauer M.J., Sugawara M., Tomasovych A., Williams J., Yasuhara M., Finnegan S., Hull P.M., BioDeepTime: a database of biodiversity time series for modern and fossil assemblages. *Global Ecology and Biogeography*.

Foster W. J., Asatryan G., Botting J., Lazarus D., Renaudie J., Kiessling W., Response of siliceous marine organisms to Permian-Triassic climate crisis based on new findings from central Spitsbergen, Svalbard. *bioRXiv* [preprint]

Rodrigues de Faria G., Lazarus D., Renaudie J., Stammeier J., Özen V., Struck U., Late Eocene to early Oligocene productivity events in the proto-Southern Ocean as drivers of global cooling and Antarctica glaciation. *EGUsphere* [preprint]

Trubovitz S., Renaudie J., Lazarus D., Noble P. Abundance does not predict extinction risk in the fossil record of marine plankton. *Communications Biology*,6:554.

Coiffard C., El Atfy H., Renaudie J., Bussert R., Uhl D., The emergence of the tropical rainforest biome in the Cretaceous. *Biogeosciences*, 20(6):1145–1154.

2022 Gille-Petzoldt J., Gohl K., Uenzelmann-Neben G., Grützner, J., Klages J.P., IODP Expedition 379 Scientists[1]. West Antarctic Ice Sheet Dynamics in the Amundsen Sea Sector since the Late Miocene–Tying IODP Expedition 379 Results to Seismic Data. *Frontiers in Earth Science*,10:976703.

Asatryan G., Lazarus D., Harbott M., Todorovic S., Kaplan J. O., Lee C. E., Parmesan C., Renaudie J., Thomas H., Wu H., Richards C. L. How do plants, animals and microbes interact and respond to climate change? *Frontiers for Young Minds*,10:703195.

Carlsson V., Danelian T., Boulet P., Devienne P., Laforge A., Renaudie J. Artificial Intelligence applied to the classification of eight middle Eocene species of the genus *Podocyrtis* (Polycystine Radiolaria). *Journal of Micropalaeontology*,41(2):165–182.

Trubovitz S., Renaudie J., Lazarus D., Noble P. Late Neogene Lophophaenidae (Nassellaria, Radiolaria) from the Eastern Equatorial Pacific. *Zootaxa* 5160(1):158pp.

2021 Fenton I., Woodhouse A., Aze T., Lazarus D., Renaudie J., Dunhill A., Young J., Saupe E. Triton, a new species-level database of Cenozoic planktonic foraminiferal occurrences. *Scientific Data*, 8:160.

Buchwitz M., Jansen M.A., Renaudie J., Marchetti L., Voigt S. Evolutionary change in locomotion close to the origin of amniotes inferred in a phylogenetically informed analysis of trackway data. *Frontiers in Ecology and Evolution*, 9:674779.

Gohl K., Uenzelmann-Neben G., Gille-Petzoldt J., Hillenbrand C.-D., Klages J.P., Bohaty S.M., Passchier S., Frederichs T., Wellner J.S., Lamb R., Leitchenkov G., IODP Expedition 379 Scientists[1]. Evidence for a highly dynamic West Antarctic Ice Sheet during the Pliocene. *Geophysical Research Letters*, 48:e2021GL093103.

Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists[2]. Expedition 379 Summary. *In* Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists, *Amundsen Sea West Antarctic Ice Sheet History*. Proceedings of the International Ocean Discovery Program, 379: 1–21.

Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists[2]. Expedition 379 Methods. *In* Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists, *Amundsen Sea West Antarctic Ice Sheet History*. Proceedings of the International Ocean Discovery Program, 379: 1–42.

Wellner J., Gohl K., Klaus A. and the Expedition 379 Scientists[2]. Site U1532. *In* Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists, *Amundsen Sea West Antarctic Ice Sheet History*. Proceedings of the International Ocean Discovery Program, 379: 1–47.

Wellner J., Gohl K., Klaus A. and the Expedition 379 Scientists[2]. Site U1533. *In* Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists, *Amundsen Sea West Antarctic Ice Sheet History*. Proceedings of the International Ocean Discovery Program, 379: 1–46.

2020 Trubovitz S., Lazarus D., Renaudie J., Noble P. Marine plankton show threshold extinction response to Neogene climate change. *Nature Communications*, 11:5069.

Renaudie J., Lazarus D.B., Diver P. NSB (Neptune Sandbox Berlin): An expanded and improved database of marine planktonic microfossil data and deep-sea stratigraphy.. *Palaeontologia Electronica*, 23(2):a11.

2019 Piazza V., Duarte L.V., Renaudie J., Aberhan M. Reductions in body size of benthic macro- invertebrates as a precursor of the Early Toarcian (Early Jurassic) extinction event in the Lusitanian Basin, Portugal. *Paleobiology*, 45(2), 296–316.

Gohl K., Wellner J., Klaus A. and the Expedition 379 Scientists[2]. Expedition 379 Preliminary Report: Amundsen Sea West Antarctic Ice Sheet History. *International Ocean Discovery Program: Preliminary Reports*, 379:1–33.

Varela S., Sbrocco E.J., Tarroso P., Perez-Luque A.J., Renaudie J., Warnstädt N., Fandos G., Foster W.J., Tietje M. BioExtreme hackathon en el Museum für Naturkunde de Berlín, Alemania. *Ecosistemas*, 28(1):129.

2018 Renaudie J., Drews E.-L., Böhne S. The Paleocene record of marine diatoms in deep-sea sediments. *Fossil Record*, 21(2), 183–205.

Lazarus D.B., Renaudie J., Lenz D., Diver P., Klump J. Raritas: a program for counting high diversity categorical data with highly unequal abundances. *PeerJ*, 6, e5453.

Renaudie J., Gray R., Lazarus D.B. Accuracy of a neural net classification of closely-related species of microfossils from a sparse dataset of unedited images. *PeerJ Preprints* [preprint]

2016 Renaudie J. Quantifying the Cenozoic marine diatom deposition history: links to the C and Si cycles. *Biogeosciences*, 13(21), 6003–6014.

Wiese R., Renaudie J., Lazarus, D.B. Testing the accuracy of genus-level data to predict species diversity in Cenozoic marine diatoms. *Geology*, 44(12), 1051–1054.

Renaudie J., Lazarus D.B. New species of Neogene radiolarians from the Southern Ocean - Part IV. *Journal of Micropalaeontology*, 35(1), 26–53.

2015 Renaudie J., Lazarus D.B. New species of Neogene radiolarians from the Southern Ocean - Part III. *Journal of Micropalaeontology*, 34(2), 181–209.

2014 Lazarus D.B., Barron J., Renaudie J., Diver P., Türke A. Cenozoic diatom diversity and correlation to climate change. *PLoS ONE*, 9(1), e84857.

2013 Renaudie J., Lazarus D.B. New species of Neogene radiolarians from the Southern Ocean - Part II. *Journal of Micropalaeontology*, 32(1), 59–86.

Renaudie J., Lazarus D.B. On the accuracy of paleodiversity reconstructions: a case study in antarctic radiolarians. *Paleobiology*, 39(3), 491–509.

2012 Renaudie J., Lazarus D.B. New species of Neogene radiolarians from the Southern Ocean. *Journal of Micropalaeontology*, 31(1), 29–52.

2010 Renaudie J., Danelian T., Saint-Martin S., Le Callonec L., Tribovillard N. Siliceous phytoplankton response to a Middle Eocene warming event recorded in the tropical Atlantic (Demerara Rise, ODP Site 1260A). *Palaeogeography, Palaeoclimatology, Palaeoecology*, 286, 121–134.

SEMINAR TALKS

Invited talks

2023 'Databases in Palaeontology' seminar series, FAU Erlangen (virtual): The Neptune Database. May, 17th.

2022 'Coding the Column: Using Databases to Synthesize Stratigraphy and Geologic Age' virtual symposium: Neptune Sandbox Berlin. February, 10th.

2019 Museum für Naturkunde Magdeburg, Germany: Antarktisches Mikroplankton und vergangene Klimawandel. November, 6th.

GFZ-Potsdam, Germany: Cenozoic changes in the Si and C marine cycles from the point of view of diatoms. July, 23rd.

2016 University of Leeds, UK: Diatoms, climate and the marine Silicon cycle. November, 10th.

In-house talks

2020 Automatic species counting for biodiversity and climate change research using AI and massive collection imaging. September, 21st.

2018 The Cenozoic evolution of the diatom-climate system. September, 27th.

2017 Micropaleontology, between taxonomic backbone databases and alpha taxonomy. May, 31st.

CONGRESS PARTICIPATIONS

Organization

2019 EGU general meeting in Vienna, Austria: 'SSP4.6: Plankton in modern and past ecosystems' (convener: Thibault N.; co-conveners: Bottini C., Luciani V., Renaudie J., Noble P.).

Talks, Displays and Posters

2006–now 41 talks (including 13 as speaker) at 27 conferences, 2 displays (including 1 as presenting author) at 1 conference, and 40 posters (including 18 as presenting author) at 31 conferences.

SCIENTIFIC PROGRAMMING

Softwares

2021 raupShiny – Shiny App to display Raup's coiling model (last update: version 1.1; 2021).

2017 NSB_ADP_wx – Age-Depth plot maker in Python (last update: version 0.7; 2019).

2016 Raritas – Micropaleontological counting software in Python (last update: version 0.8; 2022).

Packages

2014 NSBcompanion – R package to work with the NSB database (last update: version 2.1; 2019).

2013 CONOP9companion – R package to integrate software CONOP9 in a statistical workflow.
dendextend – R package for dendrogram visualizations (as contributor only).

Databases

2022–now Contributor of the BioDEEPtime database.

2013–now Maintainer and developer of the NSB database, successor of the legacy Neptune database.

SERVICES TO PROFESSION

2022 Scientific committee member for 16th INTERRAD meeting.
External supervisor for a MSc thesis (Janik Hirt; ETH Zürich, Switzerland).
Member of a PhD advancement committee (Marie Cueille; Université de Lille, France).

2021–now Acting scientific lead of the MfN Micropaleontology collection.

2021 Scientific expert for the evaluation process of the ANR Generic Call.

2019 Outside reader for an MSc defense (William Bugbee; University of Northern Illinois, USA).

2018 Remote reviewer for an ERC Advanced Grant proposal.

2015–18 Organizer of the MfN 'Code Clinic' Scientific Programming Club (on-the-job programming training for ECR).

2013–now 47 reviews for *Proceedings of the Royal Society B*; *Paleoceanography*; *Paleobiology*; *Frontiers in Marine Science*; *Palaeogeography, Palaeoclimatology, Palaeoecology*; *Global and Planetary Change*; *Marine Geology*; *Marine Micropaleontology*; *Journal of Paleontology*; *Quaternary Science Reviews*; *JGR Biogeosciences*; *PNAS Nexus*; *Scientific Reports*; *Proceedings of the International Ocean Discovery Program*; *Microorganisms*; *Biology*; *Diversity*; *Sustainability*; *Water*; *Geosciences*; *Plants*; *Minerals*; *Journal of Plankton Research*; *Journal of Earth Science*; *Bulletin de la Société Géologique de France*; *Comptes Rendus Palevol*; *Revue de Micropaléontologie*; *Annales de Paléontologie* and *Acta Palaeontologica Romaniae*.

WORKSHOPS

2022 'Coding the Column: Using Databases to Synthesize Stratigraphy and Geologic Age' Virtual Workshop.

2021–23 'BioDeepTIME: rhythms, aberrations, and drivers of ecological turnover from daily to million-year timescales' PaleoSynthesis Workshop virtually and at FAU, Erlangen, Germany.

2018 BioExtreme hackathon at MfN.

2017 'Access to Geosciences: sharing and publishing data related to paleontological, mineralogical, and petrological objects using a common data standard' workshop at MfN.
2010 'Paleobiology Database Intensive Workshop' at Macquarie University, Sydney, Australia.

PUBLIC OUTREACH

2023 Interactive display for the "Urzeitkrebse – Überlebenskünstler auf Zeit" exhibition at the Museum für Naturkunde Magdeburg, Germany.
2022 Interviews for 'Deep Sea Drilling', 'Lamont-Doherty Collection' and 'NSB Database' articles by F.Bertoni on Animals as Objects?, I.Heumann and T.Nadim (Eds.).
Article in *Frontiers for Young Minds*: How do plants, animals and microbes interact and respond to climate change?
Interactive display for the "Spuren im Stein ... aus dem Zeitalter der Ursaurier" exhibition at the Museum für Naturkunde Magdeburg, Germany.
2021 Interactive display for the "Biominerale – das Geheimnis der Schale" exhibition at the Museum für Naturkunde Magdeburg, Germany.
2019 Guest of the Museum Salon in the context of the "Fourth Global Day of Climate Action" event for 'Fridays For Future' at the MfN.
Public talk on 'Antarktisches Mikroplankton und vergangene Klimawandel' for the Fachgruppe Paläontologie at the Museum für Naturkunde Magdeburg, Germany.
'The ocean's plankton and climate change; how to see the future from the bottom of the ocean' booth at the MfN during the Lange Nacht der Wissenschaften and the Lange Nacht der Museen.
2014 'Tiefenzeit Geschichten der Zukunft: von Plankton, Muscheln und Klimawandel' booth at the MfN during the Lange Nacht der Wissenschaften.
2011 Guided tour of the MfN Micropaleontology Collection during the Lange Nacht der Museen.

GRANTS & AWARDS

2018 DAAD 'Make Our Planet Great Again–German Research Initiative' grant 57429681 (PI:Asatryan).
2015 DFG Grant RE3470/3–1: 'Eigene Stelle' grant in the Priority Program 527 (IODP).
2012 TMS Student Prize for best Poster at InterRad 13th meeting in Cadiz, Spain.

MEDIA COVERAGE of projects I'm involved with (selection)

2023 *Associated Press*: Loss of tiny organisms hurts ocean, fishing, scientists say.
idw - Informationsdienst Wissenschaft: 80 Millionen Jahre alter Regenwald; *Frankfurter Allgemeine Zeitung*: Forscher finden älteste Nachweise für Regenwald.
2022 *DPA – Nachrichten für Kinder*: Im Reich der allerkleinsten Wesen.
2020 *NevadaToday*: Marine Plankton face threat of extinction as planet warms.
IEEE Spectrum: Ambitious data project aims to organize the world's geoscientific records.
2019 *BBC*: The 'time machines' unlocking Antarctica's past.
Science: Newly drilled sediment cores could reveal how fast the Antarctic ice sheet will melt.
2018 *DAAD Aktuell*: "Make Our Planet Great Again – German Research Initiative": Forschung für die Zukunft der Erde.

WORK EXPERIENCE

09/2018–12/2022	Postdoctoral researcher (DAAD MOPGA-GRI) at the MfN.
11/2015–05/2017	Postdoctoral researcher (DFG) at the MfN.
03/2014–06/2015	Postdoctoral researcher (Earthtime-EU) at the MfN.
05–07/2013	Programmer at the MfN for the Neptune Database web interface.
11/2008–09/2012	Scientific assistant at the MfN.
07–08/2008	Bartender at the brasserie 'Le Jardin Gourmand', Castelnaud-la-Chapelle.
10/2007–07/2008	Library assistant at the Bibliothèque Centrale of Université Paris VII.
07–08/2003–2007	Bartender at the restaurant 'Le Bouffon', Sarlat-la-Canéda.

OTHER

Fluent in French (native) and English, intermediate level in Latin and German.
Advanced programming skills in R, python (including Django and wxPython), postgreSQL (and other SQL derivatives) and LaTeX. Familiar with Unix shell and Apache Webserver.

1 Klaus A., Kulhanek D., Bauersachs T., Courtillat M., Cowan E.A., Esteves M.S.R., De Lira Mota M.A., Fegyveresi J.M., Gao L., Halberstadt A.R., Horikawa K., Iwai M., Kim J.-H., King T.M., Penkrot M.L., Prebble J.G., Rahaman W., Reinardy B.T.I., Renaudie J., Robinson D.E., Scherer R.P., Siddoway C.S., Wu L., Yamane M.

2 Gohl K., Wellner J., Klaus A., Bauersachs T., Bohaty S.M., Courtillat M., Cowan E.A., Esteves M.S.R., De Lira Mota M.A., Fegyveresi J.M., Frederichs T.W., Gao L., Halberstadt A.R., Hillenbrand C.-D., Horikawa K., Iwai M., Kim J.-H., King T.M., Klages J.P., Passchier S., Penkrot M.L., Prebble J.G., Rahaman W., Reinardy B.T.I., Renaudie J., Robinson D.E., Scherer R.P., Siddoway C.S., Wu L., Yamane M.