

Tais Wittchen Dahl

Professor, Department of Geosciences and Natural Resource Management (IGN) University of Copenhagen (+45) 3532 2356, twd@ign.ku.dk, Researcher ID: G-5473-2012 ORCID ID: 0000-0003-4629-8036

RESEARCH AGENDA

My research integrates analytical models, laboratory experiments and geological observations to understand the co-evolution of life and Earth's global environment. As part of this, I develop new experimental geochemical tools to extract information from the geological record about Earth's past climate and oxygenation history.

EDUCATION

2009 PhD (Feb 25, 2009), University of Copenhagen (UCPH) Advisors: M. Rosing, D. Canfield
 2005 MSc (Geophysics) UCPH. Advisors: Peter Ditlevsen and David J. Stevenson (Caltech)
 2004 BSc (Physics), UCPH. Advisors: Nils Olsen and David J. Stevenson (Caltech)

POSITIONS

2024 Professor, IGN, UCPH
 2019–24 Adjunct Professor, China University of Geosciences, Wuhan
 2018– Associate Professor (tenured), Globe institute, UCPH
 2014–18 Tenure-Track Assistant Professor of Geobiology, UCPH
 2013–15 Villum Young Investigator Research fellow, UCPH
 2010–12 Villum Postdoc Research fellow, University of Southern Denmark
 2009–10 DFF Postdoc Research fellow, Harvard University
 2009 Consultant, Rockwool International A/S, sustainability of raw materials
 2011 Founder of Scientific Playground, edutainment company (PlanetCards and Mikrobekort)

RESEARCH VISITS

2013 Univ. of Exeter (T. Lenton). 2011 Harvard Univ. (A. Knoll, B. Gill). 2010, 2007, 2006 Arizona State Univ. (A. Anbar). 2002–2004 California Institute of Technology (D. Stevenson). Total 25 months.

SELECTED FELLOWSHIPS AND GRANTS

2024 Novo Nordisk NERD programme “Metals for Life...” (NNF24OC0090252)
 2023 Carlsberg Infrastructure “Oxidation specific isotope analyses of uranium” (CF23-1208)
 2023 DFF Research Project 2. “Natural Carbon Dioxide Removal from a high...” (3103-00311B)
 2022 VILLUM Synergy Programme: “Constraining rates in Earth’s sedimentary...” (50111)
 2018 DFF-ERC Project PlantImpact - Linking mesocosm experiments to... models (8102-00005B)
 2017 DFF Research Project 1. The influence of land plants on Earth's oxygen (7014-00295A)
 2017 Carlsberg Distinguished Associated Professor Fellowship (CF16-0876)
 2015 Carlsberg Infrastructure. Establishment of the Geobiology Lab (CF15-0331)
 2013-15 VILLUM Young Investigator "Oxygen Regulation on Earth" (VKR023127)
 2010–12 Villum Kann Rasmussen Post doc stipend at University of Southern Denmark (1168439)
 2009 Danish Council for Independent Research (FNU) Post doc stipend at Harvard (09-065813)

PRIZES AND AWARDS, ACADEMY MEMBERSHIPS

2020-21 UCPH Forward Talent Programme for Excellence in Research
 2013 Inge Lehmann's Award of 1983, Royal Academy of Sciences and Letters
 2011 Elected Member, Royal Danish Academy of Sciences and Letters' Young Academy
 2006 NASA Planetary Biology Internship
 2003 Caltech SURF Fellowship, Oticon Fonden, Danish Geophysical Society Award, Julie Damms Studiefond, Julie Marie Vinter’s travel grant
 2002 Bodil Pedersen Foundation’s Travel grant

BIBLIOGRAPHIC OVERVIEW

51 papers, 3 commentaries, 1 editorial in peer-reviewed scientific journals and 1 book chapter since 2010. 18 as first author and 23 as corresponding author.

h-index = 29. 3500+ citations. 12 papers with 100+ citations. (Scholar).

Field-Weighted Citation Impact (2012-21): 319% (Scopus).

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Four active postdocs (M. Ramirez, M. Yousof, I. Fernandes and Z. Zhao), 1 PhD (J. Fredborg), 1 MSc. Alumni: 5 postdocs, 7 PhDs (6 co-supervised), 8 MSc, 8 BSc/PUK, 5 Research assistant, incl. Eva Scheller (2017; PhD from Caltech 2022; now Faculty at Stanford); Julius Havsteen (2019; now PhD in Tübingen), Kasper P. Olesen (2020; now PhD at SDU); Aske L. Sørensen (2021; now PhD at U. Aarhus).

TEACHING

Altings Oprindelse (Origins). BSc students bio- and geosciences. Course responsible since 2017.

Geoengineering. MSc students, MSc Climate Change. Course responsible since 2013.

Origins. A Massive Open Online Course at Coursera.org. Teacher since 2014. >35,000 learners.

Climate Change - An Interdisciplinary Challenge, UCPH. Guest teacher since 2018.

I have taught 5 other university courses, 2 PhD summer courses, and 2 lectures at the open university.

LEADERSHIP EXPERIENCE AND PROJECT COORDINATION

2013– Group Leader at GLOBE institute since 2013.

2013– Head of the Geobiology Laboratory, UCPH,

2016-17 Project leader for the Danish Science Club's outreach project 2016-17: "World of Microbes".

PI on eight major grants (>1M DKK) and co-PI on another two. Total grants funded as PI: 25.5M DKK

Formal training in Research Leadership: UCPH LUKU3 2016 and UCPH Forward 2020-21.

ORGANIZATION OF SCIENTIFIC MEETINGS

Organizer of geological and geobiological field work: Australia 2018, Sweden 2018, China 2019, Croatia 2021, UK 2024 + many more.

2012-15 Session convener at the Goldschmidt Conference in 2012, 2013, 2014, 2015, and 2018.

2013 Theme chair at the Goldschmidt Conference in Venice 2013 and Barcelona 2019.

COMMISSIONS OF TRUST

2023– Elected Associate Editor *Geochimica et Cosmochimica Acta* (appointed by the joint Publications Committee of the Geochemical and Meteoritical Societies)

2023– Head of Section, Geobiology Section, Globe Institute, University of Copenhagen

2022–25 Head of Globe Sustainability Programme

2021– Elected member of the expert panel in Climate Change for All European Academies (ALLEA)

2018 Invited editor for PNAS

2016 Invited editorial for Science: Dahl TW. *Identifying remnants of early Earth* (2016).

2011– Reviewer of ~70 papers in all major international journals, including Science and Nature

2011– Reviewer of international proposals for the ERC, NSF USA, NERC UK, NSERC Canada etc.

2012-14 Member of the board, Young Academy, Royal Danish Academy of Sciences and Letters

2015– Member of the evaluation and assessment committees for PhDs and recruitments, incl. 2017: T. He, UCL, UK and 2017-19: M. Thoby, Univ Brest, France, 2020–21 L. Bian, Aarhus Univ.

INVITED TALKS AND SEMINARS

30+ invited lectures and talks at science conferences and universities. Consultant for the Swedish Nuclear Waste Management (molybdenum cycling) and for Meloni Publishing company (edutainment).

MEMBERSHIPS: Geochemical Society, GSA, Danish Geophysical Society, Danish Geological Society

Publications Tais W. Dahl

Researcher ID: G-5473-2012 ORCID ID: 0000-0003-4629-8036

[Google Scholar](#) [Scopus/SciVal](#)

Brief summary of the bibliometry (publication statistics):

56 papers, 3 commentaries, 1 editorial in peer-reviewed scientific journals and 2 book chapters since 2010. 18 as first author and 26 as corresponding author.

h-index = 29. 4500+ citations. 17 papers with 100+ citations. (Scholar).

Field-Weighted Citation Impact: 314% (Scopus).

1. Peer-reviewed publications

(A: ARTICLES, B: COMMENTARIES, C: EDITORIALS, D: BOOKS)

- A1) **Dahl TW**, Anbar A, Gordon G, Rosing M, Frei R, Canfield DE. The behavior of molybdenum and its isotopes across the chemocline and in the sediments of sulfidic Lake Cadagno, Switzerland. *Geochimica et Cosmochimica Acta* 74, 144-163 (2010).
- A2) **Dahl TW** and Stevenson DJ. Turbulent Mixing of Metal and Silicate during Planet Accretion – and interpretation of the Hf-W chronometer. *Earth and Planetary Science Letters* 295 pp. 177-186 (2010)
- A3) **Dahl TW**, Hammarlund EH, Anbar AD, Bond DPG, Gill BC, Gordon GW, Knoll AH, Nielsen AT, Schovsbo NH, Canfield DE 2010. A Devonian rise of atmospheric oxygen correlated to the radiations of terrestrial plants and predatory fish. *Proceedings of the National Academy of Sciences* 107, 17911-17915 (2010).
- A4) **Dahl TW**, Clausen AU, Hansen PB, The human impact on natural rock reserves using basalt, anorthosite, and carbonates as raw materials in insulation products, *International Geology Review* 53, 894 - 904 (2011)
(Consultancy work for Rockwool International A/S)
- B1) **Dahl TW** and Hammarlund EH, Anbar AD, Bond DPG, Gill BC, Gordon GW, Knoll AH, Nielsen AT, Canfield DE. Reply to Butterfield: The Devonian radiation of large predatory fish coincided with elevated atmospheric oxygen levels *Proceedings of the National Academy of Sciences* 108, 9, E29-E29 (2011).
- A5) **Dahl TW**, Hammarlund E, Do large predatory fish track ocean oxygenation? *Communicative and Integrative Biology*. 4:1, 1-3 Jan/Feb (2011).

Journal not registered with WoS (11).

- A6) **Dahl TW**, Canfield DE, Rosing MT, Frei RE., Gordon GW, Knoll A, Anbar AD, Molybdenum evidence for expansive sulfidic water masses in 750 Ma oceans, *Earth and Planetary Science Letters* 311, 264-274 (2011).
- A7) Hammarlund EU, **Dahl TW**, Harper DAT, Bond DPG, Nielsen AT, Bjerrum CJ, Schovsbo NH, Schönlaub HP, Zalasiewicz JA, Canfield, D. E., A sulfidic driver for the end-Ordovician mass extinction. *Earth and Planetary Science Letters* 331-332, 128-139 (2012).
- A8) **Dahl TW**, Chappaz A, Lyons T, Fitts J, Molybdenum reduction in a sulfidic lake: Evidence from X-Ray Absorption Fine-Structure Spectroscopy and implications for the Mo paleoproxy. *Geochimica et Cosmochimica Acta* 103: 213–231 (2013).
- A9) Balslev-Clausen D, **Dahl TW**, Saad N, Rosing MT. Precise $\delta^{13}\text{C}$ analyses of rock samples using Continuous Flow Cavity Ring Down Spectroscopy (CF-CRDS). *J. Anal. At. Spectrom.* 28(4): 516–523 (2013)
- A10) Wirth SB, Gilli A, Niemann H, **Dahl TW**, Ravasi D, Lehmann MF, Peduzzi R, Peduzzi S, Tonolla M, Anselmetti FS, Combining sedimentological, trace metal (Mn, Mo) and molecular evidence for reconstructing past water-column redox conditions: The example of meromictic Lake Cadagno (Swiss Alps). *Geochimica et Cosmochimica Acta* 120: 220–238 (2013)
- A11) **Dahl TW**, Ruhl M, Hammarlund EU, Canfield DE, Rosing MT, Bjerrum CJ. Tracing euxinia by molybdenum concentrations in sediments using handheld x-ray fluorescence spectroscopy (HH-XRF). *Chemical Geology* 360–361, 241–251 (2013).
- A12) Overballe-Petersen S, Harms K, Orlando LAA, Mayar JVM, Rasmussen S, **Dahl TW**, Rosing MT, Poole AM, Sicheritz-Ponten T, Brunak S, Inselmann S, de Vries J, Wackernagel W, Pybus O, Nielsen R, Johnsen PJ, Nielsen KM, Willerslev E. Bacterial natural transformation by highly fragmented and damaged DNA. *Proceedings of the National Academy of Sciences* 110, 19860–19865 (2013).
- A13) * **Dahl TW**, Boyle RA, Canfield DE, Connelly JN, Gill BC, Lenton TM, Bizzarro M. Uranium isotopes distinguish two geochemically distinct stages during the later Cambrian SPICE event. *Earth and Planetary Science Letters* 401, 313-326 (2014).
- A14) Boyle RA, **Dahl TW**, Dale A, Shields-Zhou GA, Zhu M, Brasier MD, Canfield DE, Lenton TM. Stabilization of the coupled oxygen and phosphorus cycles by the evolution of bioturbation. *Nature-Geoscience* 7, 671-676 (2014).

- B2) Zhang S, Wang X, Wang H, Bjerrum CJ, Hammarlund EU, **Dahl TW**, Canfield, DE Reply to Planavsky et al.: Strong evidence for high atmospheric oxygen levels 1,400 million years ago. *Proceedings of the National Academy of Sciences USA* 113, E2552-2553 (2016).
- C1) **Dahl TW**. Identifying remnants of early Earth. *Science* 352, 768-769 (2016).
- A15) Lenton T, **Dahl TW**, Daines S, Mills B, Ozaki K, Saltzman MR, Porada P. Earliest land plants created modern levels of atmospheric oxygen. *Proc Natl Acad Sci* 113, 9704–9 (2016)
- A16) **Dahl TW**, Chappaz A, Hoek J, McKenzie C, Svane S, Canfield DE, Evidence of molybdenum interaction with particulate organic matter under sulfidic conditions. *Geobiology*, 1-13 (2016).
- A17) Kendall B†, **Dahl TW**†, Anbar AD. Good Golly, Why Moly? The Stable Isotope Geochemistry of Molybdenum. *Reviews in Mineralogy and Geochemistry* 82, 683–732 (2017)
- † shared first-authorship
- A18) **Dahl TW** and Wirth S. Molybdenum isotope fractionation in a sulfidic lake – testing ways to discern isotope fractionation processes in euxinic sediments *Chem. Geol* 460, 84–92. (2017)
- A19) **Dahl TW**, Connelly JN, Kouchinsky A, Gill BC, Månsson SF, Bizzarro M. Reorganization of Earth's biogeochemical cycles briefly oxygenated the oceans 520 Myr ago. *Geochemical Perspectives Letters* 3, 210–220 (2017).
- A20) Boyle RA, **Dahl TW**, Bjerrum CJ, Canfield DE. Bioturbation and directionality in Earth's carbon isotope record across the Neoproterozoic–Cambrian transition. *Geobiology*, 16, 252–278 (2018).
- A21) Scheller EL, Dickson A, Canfield DE, Korte C, Kristiansen KK, **Dahl TW**. Ocean redox conditions between the Snowballs – geochemical constraints from Arena Formation, East Greenland. *Precambrian Research*, 319, 173–186 (2018).
- A22) **Dahl TW**, Siggard-Andersen M-L, Schovsbo N, Kjær K, Nielsen AT. Brief oxygenation events in Cambrian anoxic oceans solves the animal breathing paradox. *Sci. Rep*, 9, 1–9 (2019).
- A23) **Dahl TW**, Connelly JN, Li D, Kouchinsky A, Gill BC, Porter S, Maloof AC, Bizzarro M. Atmosphere-ocean oxygen and productivity dynamics during early animal radiations *Proceedings of the National Academy of Sciences*, **116** (39) 19352–19361 (2019).
- A24) Zhang F, **Dahl TW**, Lenton TM, Luo G, Shen S, Algeo TJ, Planavsky N, Liu J, Cui Y, Qie W, Romaniello SJ, Anbar AD. Extensive marine anoxia associated with the Late Devonian Hangenberg Crisis *Earth and Planetary Science Letters*, available online (2020).
- A25) Zhang F, Cui Y, Zhang H, **Dahl TW**, Krainer K, Shen S, Anbar AD. Two distinct episodes of marine anoxia during the Permian-Triassic crisis evidenced by uranium isotopes in marine

dolomites (accepted pending major revision. *Geochimica et Cosmochimica Acta*, available online (2020).

- A26) Cao M, Zhang F, Daines SJ, Lenton TM, Zhou Y, **Dahl TW**, Algeo TJ, Shi W, Anbar A, Chen Y, Shen S-Z. Comparison of Ediacaran platform and slope $\delta^{238}\text{U}$ records in South China: Confirmation of global deep-ocean oxygenation and implications for origin of the Shuram negative $\delta^{13}\text{C}_{\text{carb}}$ excursion. *Geochimica et Cosmochimica Acta*, available online (2020).
- A27) **Dahl TW**, Arens SKM. The impacts of land plant evolution on Earth's climate and oxygenation state – An interdisciplinary review. *Chemical Geology*, **547**, 119665 (2020). [Link](#)
- A28) Zhang F, del Rey A, Romaniello JS, Chen X, Planavsky NJ, **Dahl TW**, Lenton TM, Clarkson MO, Lau KV, Li Z, Zhao M, Algeo TJ, Anbar AD. Uranium isotopes in marine carbonates as a global ocean paleoredox proxy: A critical review. *Geochimica et Cosmochimica Acta* **287**, 27–49, (2020), [Link](#).
- A29) Del Rey A, Havsteen JC, Bizzarro M, **Dahl TW**. Untangling the diagenetic history of uranium isotopes in marine carbonates: A case study tracing the $\delta^{238}\text{U}$ composition of late Silurian oceans using calcitic brachiopod shells. *Geochimica et Cosmochimica Acta*, **287**, 93-110 (2020). [available online](#).
- A30) Livermore B, **Dahl TW**, Bizzarro M, Connelly JC, Uranium isotope compositions in modern biogenic carbonates and implications for the paleocean oxygenation proxy *Geochimica et Cosmochimica Acta*, **287**, 50–64 (2020). [Link](#)
- A31) Sørensen AL, Nielsen AT, Thibault A, Zhao Z, Schovsbo NH, **Dahl TW***. Astronomically forced climate cycles in the Late Cambrian. *Earth and Planetary Science Letters*, **548**, 116475. (2020). [Link](#)
- A32) Lu X, **Dahl TW**, Wang Z, Wang S, Kendall B. Estimating ancient seawater isotope compositions and global ocean redox conditions by coupling the molybdenum and uranium isotope systems of euxinic organic-rich mudrocks. *Geochimica et Cosmochimica Acta*, **290**, 76-103 (2020).
- A33) Zhao H, **Dahl TW**, Chen Z-Q, Algeo TJ, Zhang L, Hu Z, Liu Y, Hu Z. Anomalous marine calcium cycle linked to carbonate factory change after the Smithian Thermal Maximum (Early Triassic). *Earth-Science Reviews*. **211**, 103418 (2020).
- A34) Mehra A, Keller B, Zhang T, Tosca NJ, McLennan SM, ..., **Dahl TW**, ... Strauss JV Curation and analysis of global sedimentary geochemical data to inform Earth history, *GSA Today*, **31**, 5, 1–9 (2021). [Link](#)

- A35) Pan W, Cao M-C, Du Y-S, Cheng M, Zhou Y-Q, Algeo T, Zhao M-Y, Thibault N, Li C, Wei G-Y, **Dahl TW**. Paired U and Mo isotope evidence for widespread anoxia in the Cryogenian interglacial ocean. *Precambrian Research*, **361**, 106244 (2021).
- B3) **Dahl TW** and Arens SKM. Land plant evolution and global erosion rates: Reply to Neil S. Davies and William J. McMahon. *Chemical Geology* **573**, 120167 (2021) [Link](#)
- A36) Farrell UC, ... **Dahl TW**, ...Sperling, EA. The Sedimentary Geochemistry and Paleoenvironments Project. *Geobiology*, 2021:00:1-12 [Link](#)
- A37) **Dahl TW**, Hammarlund EU, Rasmussen CMØ, Bond DPG, Canfield DE. Shallow water euxinia during the Late Ordovician Mass Extinction – insights from coupled molybdenum and uranium isotope records. *Earth-Science Reviews*. 103748. (2021) [Link](#)
- A38) Halder S, Arens SKM, Jensen K, **Dahl TW**, Porada P. A dynamic local scale vegetation model lycophytes (LYCOM). *Geosci. Model Dev. Discuss.*15, 2325-2343 (2021). [Link](#),
- A39) Gill BC, **Dahl TW**, Hammarlund EU, LeRoy MA, Gordon GW, Canfield DE, Anbar AD, Lyons T. Redox dynamics of later Cambrian oceans. *Palaeogeography, Palaeoclimatology, Palaeoecology*. Vol 581, Nov 2021, 110623. [Link](#)
- A40) Zhao Z, Ahlberg P, Thibault N, **Dahl TW**, Schovsbo N, Nielsen AT. High-resolution carbon isotope chemostratigraphy of the middle Cambrian to lowermost Ordovician in southern Scandinavia: implications for global correlation. *Global and Planetary Change*. Available online. Jan 2022. [Link](#)
- A41) Zhang F, Stockey RG, Xiao S, Shen S-Z, **Dahl TW**, Cui Y, Li Z, Anbar AD, Planavsky NJ. Uranium isotope evidence for extensive shallow water anoxia in the early Tonian oceans. *Earth and Planetary Science Letters*, **583**, (2022), 117437. [Link](#)
- A42) Zhao Z, Thibault N, **Dahl TW**, Schovsbo NH, Sørensen AL, Rasmussen CMØ, Nielsen AT, Synchronizing rock clocks in the Cambrian. *Nature Comm.* 13. 1-13. (2022). [Link](#)
- A43) Wang W, Zhang F, Connelly J, Bizzarro M, Shen S-Z, **Dahl TW**. Uranium isotopes in Permian calcitic brachiopods and marine carbonates: validation of the global paleoredox proxy and implications for ocean oxygenation in the Permian. *Earth and Planetary Science Letters*. [Link](#)
- A44) Del Rey Á, Rasmussen CMØ, Calner M, Planavsky N, **Dahl TW**. Stable ocean redox during the main phase of the Great Ordovician Biodiversification Event. *Nature Comms. Earth Env.* Sep 2022. [Link](#)

- D1) Shields GA, Edgar K, Ratcliffe KT, and **Dahl TW**. “Chapter 6: Chemostratigraphy” in book series “Deciphering Earth's History: the Practice of Stratigraphy” published by the Geological Society of London. Editor: A. Coe. [Online](#).
- A45) **Dahl TW**, Harding MAR, Brugger J, Feulner G, Norrman K, and Junium CK. Low atmospheric CO₂ levels before the emergence of forested ecosystems. *Nature Communications* 13 (1), 1-10 (2022).
- A45) Zhao Z, Dickson A, Basu A, Nielsen AT, Pang X, Schovsbo NH, **Dahl TW**. Dynamic oceanic redox conditions across the late Cambrian SPICE event constrained by molybdenum and uranium isotopes. *Earth and Planetary Science Letters*, **604**, 118013 (2023). [Link](#)
- A46) Zhang L, Algeo TJ, Zhao L, **Dahl TW**, Chen Z-Q, Zhang Z, Poulton SW, Hughes NC, Gou X, Li C. Environmental and trilobite diversity changes during the middle-late Cambrian SPICE event. *GSA Bull.* (2023). [Link](#)
- D2) **Dahl TW**, "Origin of O₂ on Earth", in *The Origins of All Things*. Eds. D. Harper & O. Seeberg. Munksgaard (2023). [Link](#)
- A47) Yuan Y, Chen T, Zhang F, Liu Y, Xiong G, Wei G, **Dahl TW**, Yan W, Ling H-F, Cheng H, Shen S-Z. Substantial incorporation of isotopically heavy reduced U species into marine carbonate sediments. *Geochimica et Cosmochimica Acta*, **358**, 27–37 (2023). [Link](#)
- A48) del Rey Á, Frýda J, Wang C, Planavsky N, **Dahl TW**. Global ocean anoxia during the late Silurian Lau/Kozlowskii bioevent did not drive the positive carbon excursion *Global and Planetary Change*, **229**, 104248 (2023). [Link](#)
- A49) Frieling J, Mather T, Fendley I, Jenkyns H, Zhao Z, **Dahl TW**, Bergquist B, Cheng K, Nielsen A, Dickson A. No evidence for a volcanic trigger for late Cambrian carbon cycle perturbations. *Geology*. **52** (1) 12–16_ (2023). [Available online](#)
- A50) Stockey RG, Cole DB, Farrell UC, ... **Dahl TW**,..., Planavsky NJ, Sperling EA. Multiple increases in atmospheric oxygen and marine productivity through the Neoproterozoic and Paleozoic. *Nature Geoscience*. In press. [Preprint](#)
- A51) Sørensen AL and **Dahl TW**. Cascading oxygen loss shorewards in the oceans – insights from the Cambrian SPICE event. *OneEarth* **7** (6), 1108-1120 (2024).
- A52) Chen J, Li S, Zhang S, Isson T, **Dahl TW**, Planavsky N, Zhang F, Wang X, Shen S, Montañez I. Repeated occurrence of marine anoxia under high atmospheric O₂ and icehouse conditions. *Proceedings of the National Academy of Sciences*, **122** (26) 1–9 (2025).

- A53) Olesen KP, Bura-Nakic E, Kvashnina K, Pidchenko I, **Dahl TW**. Uranium reduction in modern and ancient marine carbonate settings – insights from anaerobic U extractions and XANES analyses. *Geochimica et Cosmochimica Acta*, **404**, 134–149 (2025).
- A54) Bubphamanee K, Kipp MA, Meixnerova J, Stüeken EE, Ivany LC, Bartholomew AJ, Algeo TJ, Brocks JJ, **Dahl TW**, Kinsley J, Tissot FLH, Buick R. Devonian ocean oxygenation enabled the expansion of early animals into deeper-water habitats. *Proceedings of the National Academy of Sciences*, **122** (35) 1–7 (2025).
- A55) Zhao Z, Dickson A, Basu A, Schovsbo N, Nielsen AT, **Dahl TW**. Reconstructing millennial scale redox changes in the Cambrian marine environment by sub-millimetre molybdenum and uranium isotope stratigraphy. *Nature Communications Earth and Environment* (in press).

2. NON-PEER VIEWED PUBLICATIONS (TEACHING MATERIAL, BOOKS, NEWSPAPERS, ETC.)

- T1) **Dahl TW**, Leer KL, Pagh M Planetkort. Geografforlaget ISBN: 978-87-7702-522-8 (2007)
- T2) Jensen F, **Dahl TW**, Leer KL, Pagh M. Planetkort lærervejledning. Geografforlaget (2008)
- T3) **Dahl TW**, Leer KL, Pagh M. Planetkort, 2nd edition, Forlaget Meloni. ISBN 978-87-92505-57-6 (2011)
- T4) **Dahl TW**, Kock B, + scientific playground team PlanetCards for Apple iPhone/iPod (2012).
- T5) Jensen F, **Dahl TW**, Leer KL, T. Meloni. Lost in Space. Web-based science teaching for primary school (in press).
- T6) Rosing et al. Nordøstgrønland Ekspeditionen Ehrhorn Hummerston, Denmark (2011)
- T7) Løkken M. Nysgjerrig på... Havdypet, Manschou AS, Bergen, Norway (2015).
- T8) Lundby A, Gerken M, Quist P, Bille M, **Dahl TW**. *Flere kvinder giver fair play*. Weekendavisen May 29, 2015
- T9) Lundby A, Gerken M, Jess T, **Dahl TW**. *Hvordan når kvinderne toppen*. Berlingske Tidende Nov 5, 2013
- T10) **Dahl TW**. The origin of O₂ on Earth, in: *Origins Eds. D. Harper & O. Seeberg*, Dunedin Academic Press (In press).
- T11) Jørgensen UG, Buchhave LA, **Dahl TW**. *Exoplaneter – det næste skridt: Hvordan ser atmosfærerne ud?* KVANT, nr. 1 (2017).
- T12) **Dahl TW** & Overballe-Petersen S. Mikrobekort. Videnskabsklubben.dk (2017)
- T13) **Dahl TW**, Leer KL, Planetkort. Scientific Playground (3rd ed. 2017, 4th ed. 2022) EAN-13: 5700002085214
- T14) **Dahl TW**, Leer KL, PlanetCards (in English). Scientific Playground (2017) EAN-13: 5700002085221
- T15) Overballe-Petersen S, Kelager A, **Dahl TW**. Mikrobernes Verden (2017) undervisningsprogram for Videnskabsklubben.
- T16) **Dahl TW**, Leer KL, Schäfer U. PlanetenKarten (in German). Scientific Playground (2022) EAN-13: 5700002085245
- T17) **Dahl TW**, Leer KL, Rekaa V., Planet-Kort (in Norwegian). Scientific Playground (2022) EAN-13: 5700002085238