

Anne-Sofie Crüger Ahm

Simons Foundation Postdoctoral Fellow
Princeton University
Department of Geosciences, Guyot Hall
Princeton, NJ 08544, USA

ascahm@gmail.com
aahm@princeton.edu
ORCID: 0000-0002-5142-0326
Phone: +1-609-216-6060

Adjunct, School of Earth and Ocean Sciences
University of Victoria, BC, Canada

annesofieahm@uvic.ca

EDUCATION

- 2016 PhD, University of Copenhagen
 Department of Geosciences and Natural Resource Management
 Advisor: Christian J. Bjerrum
- 2014 MSc Geology-Geoscience, University of Copenhagen
 Department of Geosciences and Natural Resource Management
- 2011 BSc Geology-Geoscience, University of Copenhagen
 Department of Geosciences and Natural Resource Management
 including courses at The University Center in Svalbard (UNIS)

PROFESSIONAL APPOINTMENTS

- 2022– Assistant Professor
 University of Victoria, School of Earth and Ocean Sciences
- 2020–2022 Adjunct faculty
 University of Victoria, School of Earth and Ocean Sciences
- 2019–2022 Simons Foundation Postdoctoral Fellow
 Princeton University, Department of Geosciences
- 2017–2019 Carlsberg Foundation Postdoctoral Fellow
 Princeton University, Department of Geosciences
- 2009–2012 Capital Region of Denmark,
 Corporate Management Environment, Student assistant

PUBLICATIONS

Peer-reviewed published articles

- 2021 Nelson, L. L., **Ahm, A-S. C.**, Macdonald, F. A., Higgins, J. A., Smith, E. F., Fingerprinting local controls on the Neoproterozoic carbon cycle with the isotopic record of Cryogenian carbonates in the Panamint Range, California. *Earth and Planetary Science Letters*, 566, 116956 <https://doi.org/10.1016/j.epsl.2021.116956>
- 2020 Crockford, P.W, Kunzmann, M., Blättler, C.B., Boriani K-A., Murphy, J.G., **Ahm, A-S. C.**, Sharoni, S., Halverson, G.P., Planavsky, N.J., Halvey, I., Higgins, J.A. Restricting Neoproterozoic seawater chemistry from early diagenetic dolomite. *Geology*, v. 49, <https://doi.org/10.1130/G48213.1>
- 2020 Bold, U., **Ahm, A-S. C.**, Schrag, D. P., Higgins, J. A., Jamsran, E., Macdonald, F. A., Effect of dolomitization on isotopic records in Neoproterozoic carbonates of southwestern Mongolia. *Precambrian Geology*, 350, <https://doi.org/10.1016/j.precamres.2020.105902>
- 2020 Gussone, N., **Ahm, A-S. C.**, Lau, K. V., Bradbury, H. J., Calcium isotopes in deep time: Potential and limitations, *Chemical Geology*, 544. <https://doi.org/10.1016/j.chemgeo.2020.119601>
- 2020 Jones, D. S., Brothers, W. R., **Ahm, A-S. C.**, Slater, N., Higgins, J. A., Fike, D. A., Sea level, carbonate mineralogy, and early diagenesis controlled $\delta^{13}\text{C}$ records in Upper Ordovician carbonates, *Geology*, 48, 194-199. <https://doi.org/10.1130/G46861.1>
- 2019 Crockford, P. W., Wing, B. A., Paytan, A., Hayles, J. A., Middleton, J., Torres, M., **Ahm, A-S. C.**, Caxito, F., Uhlein, G., Halverson, G. P., Horner, T. J., Barium-isotopic constraints on the origin of post-Marinoan barites, *Earth and Planetary Science Letters*, 519, 234-244. <https://doi.org/10.1016/j.epsl.2019.05.018>
- 2019 **Ahm, A-S. C.**, Maloof, A. C., Macdonald, F. A., Hoffman, P. F., Bjerrum C. J., Bold, U., Rose, C. V., Strauss, J. V., Higgins, J. A., An early diagenetic deglacial origin for basal Ediacaran cap dolostones, *Earth and Planetary Science Letters*, 506C, 292-307. <https://doi.org/10.1016/j.epsl.2018.10.046>
- 2018 **Ahm, A-S. C.**, Bjerrum, C. J., Blättler, C. L., Swart, P. K., Higgins, J. A., Quantifying early marine diagenesis in shallow water carbonate sediments, *Geochimica et Cosmochimica Acta*, 236, 140-159. <https://doi.org/10.1016/j.gca.2018.02.042>

- 2018 Higgins, J. A., Blättler, C. L., Lundstrom, E. A., Santiago-Ramos, D. P., Akhtar, A. A., **Ahm, A-S. C.**, Bialik, O., Holmden, C., Bradbury, H., Murray, S. T., Swart, P. K., Mineralogy, early marine diagenesis, and the chemistry of shallow-water carbonate sediments, *Geochimica et Cosmochimica Acta*, <https://doi.org/10.1016/j.gca.2017.09.046>
- 2017 **Ahm, A-S. C.**, Bjerrum C. J., Hammarlund, E. U., Disentangling the record of diagenesis, local redox conditions, and global seawater chemistry during the latest Ordovician glaciation, *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2016.09.049>

Manuscripts in review / in preparation

- in review* **Ahm, A-S. C.**, Bjerrum, C.J., Hoffman, P.F., Macdonald, F.A., Maloof, A.C., Rose, C.V., Strauss, J.V., Higgins, J.A. The Ca and Mg isotope record of the Cryogenian Trezona carbon isotope excursion. Submitted to Earth and Planetary Science Letters. Preprint available on www.eartharxiv.org <https://doi.org/10.31223/X5KP5G>
- in review* **Ahm, A-S. C.**, Husson, J.M., Local and global controls on carbon isotope chemostratigraphy. Submitted to Cambridge Elements. Preprint available on www.eartharxiv.org <https://doi.org/10.31223/X5V607>
- in review* Farrell, U.C., ...**Ahm, A-S. C.**, ...Sperling, E.A., The Sedimentary Geochemistry and Paleoenvironments Project. Submitted to Geobiology
- Akhtar, A. A., **Ahm, A-S. C.**, Higgins, J. A., Mixed marine and meteoric early diagenetic alteration of shallow water carbonate sediments: insights from paired $\delta^{44/40}\text{Ca}$ and $\delta^{26}\text{Mg}$ values. Manuscript in preparation.
- Busch, J.F., Hodgin, E.B., **Ahm, A-S. C.**, Husson, J.M., Macdonald, F.A., Bergmann, K.D., Higgins, J.A., Strauss, J.V. Ediacaran Shuram carbon isotope excursion as a global oceanographic event. Manuscript in preparation.

AWARDS AND FUNDING

- 2019–2022 Simons Collaboration on the Origins of Life (SCOL) Postdoctoral Fellowship (PI, USD 276 000)
- 2017–2019 Carlsberg Foundation Internationalisation Fellowship (PI, USD 115 000)
- 2014 The Danish Institute of Damascus, fieldwork and travel grant, Sultanate of Oman (Co-PI, USD 7000)

INVITED TALKS

2021	Dartmouth College, May 19th, 2021, Department Zoom seminar
2020	Keynote Speaker, Session 14B, Goldschmidt, Hawaii, USA, Jun 21–26th, 2020
2019	Gordon Research Conference on Geochronology, New Hampshire, USA, 2019
2019	Geobiology Conferences, Banff, Canada, June 9–13th, 2019
2019	University of Victoria, SEOS, April 2nd, Department Seminar
2019	University of Houston, March 6th, Department Seminar
2019	Princeton University, Feb 21st, EGGs Seminar
2019	Cornell University, Feb 15th, Department Seminar
2019	University of Göttingen, Germany, Jan 14th, Department Colloquium
2018	University of Southern California, Department Seminar, Dec 3rd
2018	University of California Santa Barbara, Speakers Club, Oct 11th
2017	Geological Society of America annual meeting, Seattle
2016	Cambridge University, Geochemical Seminar.

TEACHING EXPERIENCE

Teaching assistant

2015	Paleoclimate (Undergraduate level)
2014	Dynamic stratigraphy (Undergraduate level)
2014	Utah field and methods course, USA (Graduate level)
2013	Field course 2, Slemmestad, Norway (Undergraduate level)
2012	Past climate and sea-level change (Graduate level)
2012	Geological processes and material (Undergraduate level)

Student co-supervision

2020–	Co-advisor w./ Colin Goldblatt to PhD student Daniel Garduno Ruiz, SEOS, University of Victoria
2021–	Committee member, PhD student Connor Vanwieren (main advisors Blake Dyer and Jon Husson), SEOS, University of Victoria

Teaching and DEI training

2013	Course: Introduction to University Pedagogy, University of Copenhagen
2021	URGE: Unlearning Racism in Geoscience (https://urgeoscience.org/)

FIELD WORK

- 2019 Ontario, Canada: Archean carbonates from the Steep Rock area (1 week)
- 2018 Death Valley, US: Cryogenian stratigraphy in the Panamint Range (2 weeks)
- 2015 Sultanate of Oman: The Ediacaran Shuram isotope anomaly. (3 weeks)
- 2012 Central Nevada: The late Ordovician glaciation and mass extinction. (3 weeks)
- 2010 Svalbard: Research cruise in Arctic ocean, RV Jan Mayen (2 weeks)

SERVICES TO PROFESSION

Conference sessions

- 2020 Co-chair of session, GSA, Montreal, 25-28 Oct
 Evolving Perspectives on the Tonian Biosphere and Environmental Change

- 2019 Co-chair of session, Goldschmidt Conference, Barcelona
 Session 07d: Revisiting the Carbon Isotope Record and its Links to Earth
 Oxygenation and Climate

- 2018 Co-chair of session, Goldschmidt Conference, Boston
 Session 07c: Seafloor Diagenesis, Hydrothermal Processes, and Biogeochem-
 istry: Implications for the Earth System Through Time

Organizer of the Princeton Environmental Geology and Geochemistry Seminar ([EGGs](#)) Lecture Series 2019

Reviewer ([Publons](#))

Earth and Planetary Science Letters
Geochemistry, Geophysics, Geosystems
Geochimica et Cosmochimica Acta
Geology
Nature Communications
Nature Geoscience
Science Advances
The Depositional Record

The National Science Foundation (NSF)
National Cave and Karst Research Institute (NCKRI)

Professional Memberships

- 2020– Geochemical Society
2018– [Ca Isotope Community](#)
2018–2019 American Geophysical Union (AGU)
2015–2019 Geological Society of America
2012–2016 European Association of Geochemistry
2008– Geological Society of Denmark

CONFERENCE PROCEEDINGS

- 2020 **Ahm, A-S. C.**, Maloof, A. C., Bjerrum C. J., Hoffman, P. F., Macdonald, F. A., Rose, C. V., Strauss, J. V., Higgins, J. A., Ca and Mg isotope record of the Trezona carbon isotope excursion (poster), *Gordon Research Conference, Geobiology, Galveston, TX*
- 2018 **Ahm, A-S. C.**, Maloof, A. C., Bjerrum C. J., Bold, U., Hoffman, P. F., Macdonald, F. A., Rose, C. V., Strauss, J. V., Higgins, J. A., An early diagenetic deglacial origin for basal Ediacaran “cap dolostones” (talk), *AGU, Washington DC 2018*
- 2018 **Ahm, A-S. C.**, Maloof, A. C., Bjerrum C. J., Bold, U., Hoffman, P. F., Macdonald, F. A., Rose, C. V., Strauss, J. V., Higgins, J. A., An early diagenetic deglacial origin for basal Ediacaran “cap dolostones” (talk), *Goldschmidt Conference, Boston 2018*
- 2018 **Ahm, A-S. C.**, Maloof, A. C., Bjerrum C. J., Bold, U., Hoffman, P. F., Macdonald, F. A., Rose, C. V., Strauss, J. V., Higgins, J. A., An early diagenetic deglacial origin for basal Ediacaran cap dolostones (poster), *Gordon Conference, Geobiology, Galveston Texas*
- 2017 **Ahm, A-S. C.**, Higgins, J. A., Hoffman, P. F., Macdonald, F. A., Maloof, A. C., Rose, C. V., Bjerrum, C. J., The Ca and Mg isotopic record of the descent into a Snowball Earth (talk), *International Symposium on the Ediacaran-Cambrian, Newfoundland*
- 2017 **Ahm, A-S. C.**, Higgins, J. A., Hoffman, P. F., Macdonald, F. A., Maloof, A. C., Rose, C. V., Bjerrum, C. J., The Ca and Mg isotopic record of the descent into a Snowball Earth (poster), *Geobiology Conference, Banff, Canada*

- 2017 **Ahm, A-S. C.**, Bjerrum C. J., Blättler, C. L., Higgins, J. A., What can carbonate diagenesis tell us about ancient seawater chemistry? (poster), *Northeast Geobiology Symposium, Connecticut*
- 2016 **Ahm, A-S. C.**, Bjerrum, C. J., Hammarlund, E. U., Disentangling the record of diagenesis, local redox conditions, and global seawater chemistry during the latest Ordovician glaciation (poster), *Northeastern Geobiology Symposium, Harvard University*
- 2015 **Ahm, A-S. C.**, Higgins, J. A., Hoffman, P. F., Macdonald, F. A., Maloof, A. C., Rose, C. V., Bjerrum C., J., The Ca and Mg isotope record of the descent and escape of the end-Cryogenian glaciation (talk), *Geological Society of America Annual meeting*
- 2015 **Ahm, A-S. C.**, Higgins, J. A., Hoffman, P. F., Macdonald, F. A., Maloof, A. C., Rose, C. V., Bjerrum C., J., Ca and Mg Isotope stratigraphy of the Trezona C isotope excursion: Geochemical record of the descent into a Snowball? (poster), *Goldschmidt Conference, Prague*
- 2014 **Ahm, A-S. C.**, Bjerrum C. J., Hammarlund, E. U., Persistent deep water anoxia through the Hirnantian mass extinction event (talk), *PhD Conference, IGN, University of Copenhagen*
- 2014 **Ahm, A-S. C.**, and Bjerrum C., J., The link between the rise of land plants, cloud-albedo, and carbon cycle perturbation (poster), *Goldschmidt Conference, Sacramento*
- 2013 **Ahm, A-S. C.**, Bjerrum C. J., Hammarlund, E. U., Regional deep water anoxic conditions during the Hirnantian extinction event (poster), *Goldschmidt Conference, Florence*
- 2013 **Ahm, A-S. C.**, Bjerrum C. J., The hurdles of the Neoproterozoic era (poster), *Geological Society of Denmark annual meeting, Copenhagen*