

## Anne-Sofie Crüger Ahm

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### 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

### PROFESSIONAL APPOINTMENTS

- 2017–      Carlsberg Foundation Postdoctoral Fellow  
Princeton University, Department of Geosciences

### PUBLICATIONS

#### Published articles

- 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*, <https://doi.org/10.1016/j.gca.2018.02.042>
- 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>

- 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>

### Manuscripts in review / in preparation

- in review* 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. *in review* in GSAB, Manuscript available upon request
- in review* 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, *in review* in EPSL, Manuscript available upon request.
- **Ahm, A-S. C.**, Maloof, A. C., Bjerrum C. J., Hoffman, P. F., Macdonald, F. A., Rose, C. V., Higgins, J. A., The Ca and Mg isotopic record of the descent into a Snowball earth. Manuscript available upon request
- Nelson, L. L., **Ahm, A-S. C.**, Macdonald, F. A., Higgins, J. A., Smith, E. F., Isotopic effects of dolomitization on Cryogenian strata in the Panamint Range, California.
- Jones, D. S., **Ahm, A-S. C.**, Fike, D. A., Higgins, J. A., Quantifying early marine diagenesis in shallow-water carbonate sediments during the latest Ordovician glaciation.
- 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

### AWARDS AND FUNDING

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

**INVITED TALKS**

- upcoming*     Invited speaker at the 2nd Geobiology Conferences, Banff, Canada, June 9–13th, 2019
- 2019            University of Göttingen, Germany, Jan 14th, Department Colloquium, The chemistry of shallow-water carbonate sediments and the dolomite problem
- 2018            University of Southern California, Department Seminar, Dec 3rd, The chemistry of shallow-water carbonate sediments and the history of the global carbon cycle
- 2018            University of California Santa Barbara, Speakers Club, Oct 11th, The chemistry of shallow-water carbonate sediments and the history of the global carbon cycle
- 2017            Geological Society of America annual meeting, Seattle, Quantifying early marine diagenesis in shallow-water carbonate sediments during the latest Ordovician glaciation
- 2016            Cambridge University (UK), Invited Seminar. Constraining the ancient carbon cycle through geochemical models of diagenesis in carbonate rocks

**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**

- 2018–           PhD student Lyle Nelson, Johns Hopkins University
- 2018–           PhD student Mary Lonsdale, Johns Hopkins University
- 2017–           PhD student Pingping Zhao, Princeton University
- 2017–           PhD student Alliya Akhtar, Princeton University
- 2016            Bachelor student Simon Stenger, University of Copenhagen
- 2013            Master student Simone LaFontain, University of Copenhagen

**Training**

2013            Course: Introduction to University Pedagogy, University of Copenhagen

**FIELD WORK**

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**

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

**Journal manuscript reviewer ([Publons](#))**

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

**Professional Memberships**

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

**CONFERENCE PROCEEDINGS**

- 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*