

Week 17, 2021

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The Bolin Centre is a multi-disciplinary consortium of over 400 scientists in Sweden that conducts research and graduate education related to the Earth's climate.



RA6 Funding of small projects or specific activities

Dear RA6 Members,
to those of you working with deep-time climate/biodiversity research, we invite short proposals for funding of small projects or specific activities, related to your research. The time scales involved could be from ice-age cycles of the Pleistocene to the Proterozoic (orbital to tectonic time scales).

Examples of the types of projects funded include pilot studies, other analytical costs, publication costs, conference registration, contributions to hosting a workshop, or field work (although this might not be possible this year). Importantly, the invoices for the expenses must be submitted by November 2021.

Please get in touch with Margret Steinhorsdottir and Helen Coxall (your RA6 co-leaders) if you need more information and to obtain a template for your application.

Helen Coxall, helen.coxall@geo.su.se »

Margret Steinhorsdottir, margret.steinhorsdottir@nrm.se »



Publications

Recent Bolin Centre publications

On bolin.su.se/publications you'll find a list of scientific journal publications by Bolin Centre scientists. Here are the most recent ones we have published on the website.

- Steinhorsdottir, M., Coxall, H.K., de Boer, A.M., Huber, M., Barbolini, N., Bradshaw, C.D., Burls, N.J., Feakins, S.J., Gasson, E., Henderiks, J., Holbourn, A., Kiel, S., Kohn, M.J., Knorr, G., Kürschner, W.M., Lear, C.H., Liebrand, D., Lunt, D.J., Mörs, T., Pearson, P.N., Pound, M.J., Stoll, H., Strömberg, C.A.E., 2021. The Miocene: the Future of the Past. *Paleoceanography and Paleoclimatology* 36, [e2020PA004037](https://doi.org/10.1029/2020PA004037).
- Pitcairn, I.K., Leventis, N., Beaudoin, G., Faure, S., Guilmette, C., and Dubé, B., 2021. A metasedimentary source of gold in Archean orogenic gold deposits. *Geology*. <https://doi.org/10.1130/G48587.1>
- Jewson, S., Scher, S., Messori, G., 2021. Decide Now or Wait for the Next Forecast? Testing A Decision Framework Using Real Forecasts and Observations. *Mon Wea. Rev.* <https://journals.ametsoc.org/view/journals/mwre/aop/MWR-D-20-0392.1/MWR-D-20-0392.1.xml>
- Modak, A., & Mauritsen, T., 2021. The 2000-2012 global warming hiatus more likely with a low climate sensitivity. *Geophysical Research Letters*: 48, [e2020GL091779](https://doi.org/10.1029/2020GL091779). <https://doi.org/10.1029/2020GL091779>
- Uribe, A., Vial, J., & Mauritsen, T., 2021. Sensitivity of Tropical Extreme Precipitation to Surface Warming in Aquaplanet Experiments Using a Global Nonhydrostatic Model. *Geophysical Research Letters*: 48, [e2020GL091371](https://doi.org/10.1029/2020GL091371). <https://doi.org/10.1029/2020GL091371>
- Stranne, C., Nilsson, J., Ulfso, A., O'Regan, M., Coxall, H.K., Meire, L., Muchowski, J., Mayer, L.A., Brüchert, V., Fredriksson, J., Thornton, B.,

- Chawarski, J., West, G., Weidner, E., & Jakobsson, M., 2021. The climate sensitivity of northern Greenland fjords is amplified through sea-ice damming. *Commun Earth Environ*: 2, 70. <https://doi.org/10.1038/s43247-021-00140-8>
- Sagoo, N., Storelvmo, T., Hahn, L., Tan, I., Danco, J., Raney, B., & Broccoli, A. J., 2021. Observationally constrained cloud phase unmasks orbitally driven climate feedbacks. *Geophysical Research Letters*: 48, e2020GL091873. <https://doi.org/10.1029/2020GL091873>
 - Rebecka Ericsson Engström, David Collste, Sarah E. Cornell, Francis X Johnson, Henrik Carlsen, Fernando Jaramillo, Göran Finnveden, Georgia Destouni, Mark Howells, Nina Weitz, Viveka Palm, Francesco Fuso-Nerini, 2021. Succeeding at home and abroad: Accounting for the international spillovers of cities' SDG actions, *NPJ Urban Sustainability*, DOI: [10.1038/s42949-020-00002-w](https://doi.org/10.1038/s42949-020-00002-w)
 - Lucander, K., Zanchi, G., Axlesson, C., Belyazid, S., 2021. The effect of nitrogen fertilization on tree growth, soil organic carbon and nitrogen leaching – A modelling study in a steep nitrogen deposition gradient in Sweden. *Forests* 12, 298. <https://www.mdpi.com/1999-4907/12/3/298>
 - Akselsson, C., Kronnäs, V., Stadlinger, N., Zanchi, G., Belyazid, S., Karlsson, P.E., Hellsten, S., Karlsson, G.P.A., 2021. Combined Measurement and Modelling Approach to Assess the Sustainability of Whole-Tree Harvesting – A Swedish Case Study. *Sustainability*: 13, 2395. <https://doi.org/10.3390/su13042395>
 - Zanchi, G., Yu, L., Akselsson, C., Bishop, K., Köhler, S., Olofsson, J., Belyazid, S., 2021. Simulation of water and chemical transport of chloride from the forest ecosystem to the stream. *Environmental Modelling & Software*: 138, 1364–8152. <https://doi.org/10.1016/j.envsoft.2021.104984>
 - Holmes, F.A., Kirchner, N., Prakash, A., Stranne, C., Dijkstra, S., Jakobsson, M., 2021. Calving at Ryder Glacier, northern Greenland. *Journal of Geophysical Research: Earth Surface*, doi: [10.1029/2020JF005872](https://doi.org/10.1029/2020JF005872)
 - Augier, P., Bolz-Tereick, C.F., Guelton, S., and Mohanan, A.V., 2021. Reducing the ecological impact of computing through education and Python compilers. *Nature Astronomy*: 5, 4, 4. doi: [10.1038/s41550-021-01342-y](https://doi.org/10.1038/s41550-021-01342-y)
 - Ernakovich, J.G., Eklund, N., Varner, R. K., Kirchner, N., Jeuring, J., Duderstadt, K., Granebeck, A., Golubeva, E., and ASIAQ participants, 2021. Is a common goal a false hope in convergence research?: Opportunities and challenges of international convergence research to address Arctic change. *Earth's Future*. <https://doi.org/10.1029/2020EF001865>
 - Ploeg, K., Seemann, F., Wild, A.-K., Zhang, Q., 2021. Glacio-Nival regime creates complex relationships between discharge and climatic trends of Zackenberg river, Greenland (1996–2019). *Climate*, 9, 59. <https://doi.org/10.3390/cli9040059>
 - Siegel, K., Karlsson, L., Zieger, P., Baccarini, A., Schmale, J., Lawler, M., Salter, M., Leck, C., Ekman, A. M. L., Riipinen, I. & Mohr, C., 2021. Insights into the molecular composition of semi-volatile aerosols in the summertime central Arctic Ocean using FIGAERO-CIMS. *Environmental Science: Atmospheres*. DOI: [10.1039/D0FA00023J](https://doi.org/10.1039/D0FA00023J)

Please send your newly published publication to bolin@su.se »



Succeeding at home and abroad: accounting for the international spillovers of cities' SDG actions

In a comment in the journal *NPJ Urban Sustainability*, Bolin Centre scientists are calling for research priorities to enable and empower cities to account for the international spillovers of their local 2030 Agenda implementation strategies.

Cities are vital for achieving the Sustainable Development Goals (SDG). However, different local strategies to advance on the same SDG may cause different 'spillovers' elsewhere, writes Bolin Centre scientists David Collste, Sarah E. Cornell, Fernando

Jaramillo, Georgia Destouni and colleagues. These spillovers have remote impacts on SDG progress outside national borders.

[Read article on Bolin Centre's website »](#)



Launch of the 50x30 Coalition

A new coalition is urging governments to prevent long-term – and essentially permanent – dire global consequences from the Earth's cryosphere (snow and ice) regions due to overshoot of the Paris climate goals.

Called "50x30" (Fifty by Thirty) to reflect the need for 50% emissions reductions by the year 2030, the group partners with those few governments that meet the 50% bar. It includes leading science institutions from around the world that focus on cryosphere and climate impacts. Several governments have endorsed the 50x30 goals and their representatives, including COP-26 High-level Champion Nigel Topping, who spoke at the April 21 launch.

Founding 50x30 scientific institutions include: the 130,000-member American Geophysical Union (AGU), Antarctic Research Centre at Victoria University of Wellington (New Zealand), Bolin Centre/Stockholm University (Sweden), Bristol University Glaciology Centre (UK), Grantham Institute – Climate Change and the Environment at Imperial College London (UK), University of Massachusetts Amherst (U.S.), Climate Analytics (Germany), and the National Snow and Ice Data Center (NSIDC, U.S.). Climate Analytics has identified the "1.5°C consistent" pathways needed to reach carbon neutrality by 2050, analyzing current country commitments. The International Cryosphere Climate Initiative (ICCI, Sweden/U.S.) provides administrative support.

[Read more about the launch event that took place on April 21 and the 50x30 Coalition on Bolin Centre's website »](#)

Miocene Temperature Portal launched

On the 26th April 2021, scientists from Bolin Centre Research Area 6 (Deep Time Climates) and international collaborators launched the Miocene Temperature Portal, which allows investigators interested in the Miocene to access and share published proxy temperature records from the marine realm. The portal is now open and ready for use. [Explore the Miocene Temperature Portal »](#)

The data portal partners recently [published a review paper on the Miocene, a warm period 23-5 million years ago](#), which is the direct result of joint RA6 and RA1 activities over 2018-2020 led by Steinthorsdottir, Coxall and de Boer.



Thick sea-ice warms Greenland fjords

A new study led by Stockholm University Assistant Professor Christian Stranne, shows

that thick sea-ice outside the fjords can actually increase the sensitivity of Greenlandic fjords to warming.

Stranne and a team of researchers from Sweden, Greenland, the Netherlands, the USA, and Canada report on expeditions to two distinct fjords in northern Greenland during the 2015 and 2019 summers.

[Read the article on Bolin Centre's website »](#)

RA5 seminar sets new participation record - watch the video now

This year's RA5 seminar was co-organized together with our climate modelling coordinator Qiong Zhang. With up to 70 participants joining in from all over Europe and beyond, it marks a new record for the seminar series highlighting the potential for hybrid-formats for post-pandemic times.

If you missed the RA5 seminar "Global warming, or global cooling, in the last 10000 years?" by Zhengyu Liu, Professor of Climate Dynamics, Ohio State University, you can watch a recorded video via the link below! The lecture provides an excellent example of how climate models can serve as a tool to test multiple hypotheses and in the end, can even lead to adjustments of proxy reconstructions rather than a falsification of the climate model. The lecture ends with a prelude to this year's Bert Bolin Climate Lecture on the "Ruddiman Hypothesis".

[Use this link to view the seminar »](#)

[Read more about the seminar »](#)

[Read the most recent paper »](#)

Commentary in Nature Astronomy on the use of Python

In a commentary and reply paper in Nature Astronomy, French and German researchers P. Augier, C. F. Bolz-Tereick, S. Guelton, and SU Dept of Meteorology and Bolin Centre researcher Ashwin Mohanan defend the use of Python in scientific codes.

[Read the article on Dept of Meteorology's website »](#)

Methane releases from the East Siberian Arctic Ocean

A new article in PNAS by Bolin Centre researchers Julia Steinbach, Henry Holmstrand, Volker Brücker, Örjan Gustafsson and colleagues.

Extensive release of methane from sediments of the world's largest continental shelf, the East Siberian Arctic Ocean (ESAO), is one of the few Earth system processes that can cause a net transfer of carbon from land/ocean to the atmosphere and thus amplify global warming on the timescale of this century.

An important gap in our current knowledge concerns the contributions of different subsea pools to the observed methane releases. This knowledge is a prerequisite to robust predictions on how these releases will develop in the future. Triple-isotope-based fingerprinting of the origin of the highly elevated ESAO methane levels points to a limited contribution from shallow microbial sources and instead a dominating contribution from a deep thermogenic pool.

[Read the article "Source apportionment of methane escaping the subsea permafrost system in the outer Eurasian Arctic Shelf" on PNAS's website »](#)

CIVIS summer course on remote sensing

Master and PhD students are welcome to apply a summer school on remote sensing!

This summer school will consist of lectures given by the participant experts on remote sensing techniques applicable to the study of climate and environmental change and related phenomena, and on the other, of using those techniques in practical sessions to perform local studies focused on a different topic each summer school edition. Complimentary activities such as (virtual) visits to institutions or facilities relevant to the course topic are also planned.

Course date: 28 June - 9 July 2021.

Application deadline: 21 May 2021.

[Read more on Civis' website »](#)

6
MAY

RA3 seminar series | Perspectives of Hydrology and Water Resources

Time & venue: May 6 at 14h00, Zoom

Titel: Advances in Modelling Global Hydrology and Water Resources under Change

Speaker: Marc F.P. Bierkens, Department of Physical Geography, Utrecht University, Utrecht, the Netherlands

[Read more »](#)

17
MAY

Bert Bolin Science Seminar

Time & venue: May 17 at 15h00, Zoom

Titel & abstract: To be announced

Speaker: William F Ruddiman, professor emeritus, Dep. of Environmental Sciences, University of Virginia

[Read more »](#)

20
MAY

Bert Bolin Climate Lecture 2021

Time & venue: May 20 at 15h00, Zoom

Titel: For how long have humans affected the climate?

Speaker: William F Ruddiman, professor emeritus, Dep. of Environmental Sciences, University of Virginia

[Read more»](#)

19-21
MAY

Bolincentrums digitala Klimatfestival

Datum och plats: 19–21 maj 2021, digitalt via länk

Vi bjuder in till ett fullspäckat program som sträcker sig över tre dagar.

Det blir aktiviteter, föreläsningar och ett livesänt avslut från Campus Frescati den 21 maj som ni garanterat inte vill missa. Välkomna!

[Program och bokning»](#)

9
JUNE

Bolin Centre Seminar Series | Research Area 4

Time & venue: June 9 at 10h00, Zoom

Titel: What can we learn from radiocarbon data of density-fractionated soil from the Lena Delta, Siberia?

Speaker: Prof. Christian Beer, Heisenberg-Professor for dynamics of soil processes, Institute of Soil Science, University of Hamburg

OFFICE STAFF - BOLIN CENTRE AT CAMPUS

Due to COVID-19, the Bolin Centre Office will be irregularly staffed at the University. Like many of you, we work from home. Don't hesitate to get in touch with us via mobile or e-mail.

- Magnus: 076-695 70 78, magnus.atterfors@su.se (Communications)
- Annika: 072-148 91 49, annika.granebeck@su.se (Coordination)
- Laila: laila.islamovic@su.se (Communications & coordination during the spring)
- Eva: 076-650 03 08, eva.gylfe@su.se (Supports the office part-time during the spring)

The **Bolin Centre Weekly News** provides you with a selection of our current activities and latest news and is sent to all members of the Bolin Centre. If you have suggestions that you would like to include or **research that you would like to share** in coming Weekly News, please contact bolin@su.se.

Editor: Magnus Atterfors

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