# CV – Stefan Sobolowski, PhD

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d.o.b.: 11/06/1972

## EDUCATION

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|---|---|
| *2010* | PhD, Earth and Environmental Engineering, Columbia University, NYC, USA |
| *2005* | M.A., Physical Geography, Hunter College, CUNY, NYC, USA |
| *1995* | B.A., Anthropology, Vassar College, Poughkeepsie, NY, USA |

## POSITIONS – CURRENT & PREVIOUS

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|---|---|
| *2018-* | Research Professor (Forsker I), NORCE Norwegian Research Centre AS, Climate & Environment, Bergen, Norway |
| *2017-2018* | Research Professor (Forsker I), Uni Research Climate, Bergen, Norway |
| *2011-2017* | Senior Research Scientist (Forsker II), Uni Research Climate, Bergen, Norway |
| *2010-2011* | Postdoctoral fellow, Dept. of Geosciences, University of North Carolina, Chapel Hill, NC, USA |
| *2009-2010* | Teaching Assistant, Dept. Earth and Environmental Engineering, Columbia University, NYC, NY, USA |
| *2009-2010* | Teaching Assistant, Environmental Science and Policy Master's Program, Columbia University, NYC, NY, USA |
| *2006-2007* | NSF GK12 Fellow Columbia University, NYC: STEM curriculum development for the Columbia Secondary School and visiting science teacher Booker T. Washington Middle School, NYC, NY, USA |
| *2005-2010* | Graduate Research Assistant, Columbia University, NYC, NY, USA |

## PROJECT MANAGEMENT EXPERIENCE

[Only projects dating back to 2015 are shown; Over the past decade I have helped bring over 13million Euros in external funding to my home institute, 60million Euros in total]

| Year | Project - Project owner - Role – Funding (total/home institute) |
|---|---|
| 2022-2026 | Impetus4Change: EU Horizon-Europe nr. 101081555, *Lead Coordinator/Principal Investigator. Responsible for overall coordination of the project that will improve the quality, accessibility and usability of near-term climate information and services at local to regional scales to strengthen and support user adaptation planning and action.* (~10/2million Euros) |
| 2020-2027 | Climate Futures: Research Council of Norway center for research-based innovation nr. 309652, *Co-investigator / WP2 Leader / Scientific Steering Committee member. In this project I lead activities that aim to provide high-quality localized climate predictions on* |

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|---|---|
| | *time scales of months to decades.* (~20/2.4million Euros) |
| 2020-2024 | Co-production of Climate Services for East Africa (CONFER): EU Horizon-2020 nr. 869730, *Co-investigator / WP2 Leader / Scientific Steering Committee member. I lead the work package tasked with improving skill of seasonal forecasts as well as development of new climate services based on hydrological and agricultural modelling.* (~8.6/2.2million Euros) |
| 2018-2021 | Enhancing Mechanistic Understanding of mid-latitude LArge-scale circulaTion Errors (EMULATE): SKD-internal project, *Principal Investigator; here we took a mechanistic view towards understanding model errors from a variety of perspectives such as midlatitude circulation (jets, stormtracks, blocking), teleconnections (tropical, Arctic) and extreme events.* (~800K/160K Euros) |
| 2017-2026 | Centre for Early Sapiens Behaviour (SapienCE): Research Council of Norway centre of excellence, *Co-Investigator / Coordinator Global and Regional Modeling; Here I lead the global and regional modelling work and ensure close collaboration with scientists engaged in proxy climate reconstructions and archaeological research.* (~13.6/2.0 million Euros) |
| 2017-2020 | Hidden Costs: Research Council of Norway grant nr. 268243, *Co-Investigator / WP1 Leader; this project investigated the implications of nature-based mitigation approaches; I lead the regional modelling activity where we modified the land cover to ascertain the impact of various afforestation schemes.* (~1.1million/300K Euros) |
| 2016-2022 | WCRP CORDEX Flagship Pilot Study on Convection over Europe and the Mediterranean, *Co-Principal Investigator: responsible for coordinating 28 international modeling teams that have produced the first convection permitting multi-model ensemble of climate change projections; in 2022 we will curate a special issue on the project in Climate Dynamics and we will make the simulations available via the ESGF* (na/na) |
| 2016-2020 | Dynamics of Arctic–Midlatitude teleconnections: mechanisms, robustness, and tropical modulation (DYNAMITE): Research Council of Norway grant nr. 255027, *Co-Principal Investigator; We investigated and provided new insights into proposed Arctic-midlatitude teleconnections, in the process helping to reconcile a longstanding model-observation disagreement.* (~1.0million/270K Euros) |
| 2016-2019 | Relevant, reliable, and robust local scale climate projections for Norway (R3): Research Council of Norway grant nr. 255397, *Principal Investigator; This project developed new techniques to bias adjust input data for dynamical downscaling and developed new, computationally efficient, hybrid dynamical-statistical approaches to downscaling.* (~1million/600K Euros) |
| 2016-2019 | Investigating the future evolution of Norwegian glaciers and hydrological impacts: an integrated modeling approach (EVOGLAC): Research Council of Norway grant nr. 255049, *Co-Investigator; In EVOGLAC we developed an interactive glacier module for the WRF-Hyrdo modelling system which greatly improved runoff simulation in glaciated catchments; we then applied the system to future projections to show the importance of including glacier-atmosphere interactions for assessment of local-to-regional climate change.* (~1million/350K Euros) |
| 2015- | Co-coordinator, WCRP EURO-CORDEX, (http://www.euro-cordex.net/): *Responsible for coordinating 30+ international modeling teams who undertake to downscale CMIP5 and now, CMIP6 climate change scenarios. Lead CMIP6 GCM selection and ensemble design task team, which extensively evaluated GCM performance and took a balanced and robust approach to designing an RCM-GCM matrix.* https://drive.google.com/file/d/1mLJukIfF78caeLSLh7GilQ2xJwIxNGV1/view?usp=sharing |

## INSTITUTIONAL RESPONSIBILITIES

| Year | Role – Description – Institute |
|---|---|
| 2022- | Co-leader, Global Research Theme, the Bjerknes Centre for Climate Research |
| 2018-2021 | Research Theme Leader, Regional Climate Impacts and Modeling, NORCE Climate |

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|---|---|
| 2018- | Affiliate researcher, Centre for Energy and Climate Transformations (CET), University of Bergen |
| 2017- | Co-leader, Mid-latitude dynamics research group under the Bjerknes Centre's Global Research Theme |
| 2011- | Research scientist, The Bjerknes Centre for Climate Research, Bergen, Norway |
| 2013-2015 | Group leader, Regional Climate & Climate Services: Uni Research Climate |
| 2013-2014 | Member, founding leader group, Norwegian Centre for Climate Services |

## SUPERVISION OF STUDENTS, POST-DOCS, RESEARCH FELLOWS & INTERNS

*2021-2022* Ole Wulff, Postdoc, Climate Futures, NORCE Norwegian Research Centre AS – Supervisor

*2020-2022* Maria Karypidou, visiting PhD scientist, AUTH, Thessaloniki, Greece – Supervisor & PhD committee member

*2019-2023* Ozan Mert Göktürk, Postdoc, SapienCE, University of Bergen, Bergen – Supervisor

*2020-2022* Lorenzo Sangelantoni, visiting postdoctoral fellow, Aquila U. Italy – Supervisor

*2017-2021* Siew Yu "Peter" Feng, PhD, University of Bergen – Co-supervisor

*2019* Basile Poujol, Masters internship, École Normale Supérieure, Paris, France – Supervisor

*2018* Lilan Chen, visiting PhD fellow, Nanjing University, Nanjing, China – Supervisor

*2017* Xinshu Fu, visiting PhD fellow, Nanjing University, Nanjing, China – Co-supervisor

*2015-2016* Helene Asbjørnsen, M.S., University of Bergen – Co-supervisor

*2014-2015* Raymond Sellevold, M.S., University of Bergen – Co-supervisor

*2011-2012* Aslaug Valved, M.S., University of Bergen – Committee member/co-supervisor

*2011-2012* Espen Karlsen, M.S., University of Bergen – Committee member/co-supervisor

*2012* Melissa Wrzesien, visiting student summer researcher, UNC-Chapel Hill – Supervisor

Track record mentoring early career scientists
Degree completion: 100%
Peer-reviewed papers: 6 published (7 more in-prep or in-review)
Masters continuing to PhD: 2
PhDs continuing to post-doc: 1

## SELECTED PUBLICATIONS [Total publications: 58+; Total citations: 2768; h-index: 24]

1. Outten, S., & Sobolowski, S. (2021). Extreme wind projections over Europe from the Euro-CORDEX regional climate models. *Weather and Climate Extremes*, *33*, 100363. https://doi.org/10.1016/j.wace.2021.100363

2. Siew, P. Y. F., Li, C., Ting, M., Sobolowski, S. P., Wu, Y., & Chen, X. (2021). North Atlantic Oscillation in winter is largely insensitive to autumn Barents-Kara sea ice variability. *Science Advances*, *7*(31), eabg4893. https://doi.org/10.1126/sciadv.abg4893
3. Pichelli, E., Coppola, E., Sobolowski, S., Ban, N., Giorgi, F., Stocchi, P., Alias, A., Belušić, D., Berthou, S., Caillaud, C., Cardoso, R. M., Chan, S., Christensen, O. B., Dobler, A., de Vries, H., Goergen, K., Kendon, E. J., Keuler, K., Lenderink, G., … Vergara-Temprado, J. (2021). The first multi-model ensemble of regional climate simulations at kilometer-scale resolution part 2: Historical and future simulations of precipitation. *Climate Dynamics*. https://doi.org/10.1007/s00382-021-05657-4
4. Jacob, D., Teichmann, C., Sobolowski, S., Katragkou, E., Anders, I., Belda, M., Benestad, R., Boberg, F., Buonomo, E., Cardoso, R. M., Casanueva, A., Christensen, O. B., Christensen, J. H., Coppola, E., De Cruz, L., Davin, E. L., Dobler, A., Domínguez, M., Fealy, R., … Wulfmeyer, V. (2020). Regional climate downscaling over Europe: Perspectives from the EURO-CORDEX community. *Regional Environmental Change*, *20*(2), 51. https://doi.org/10.1007/s10113-020-01606-9
5. Poujol, B., Sobolowski, S. P., Mooney, P. A., & Berthou, S. (2020). A physically based precipitation separation algorithm for convection-permitting models over complex topography. *Quarterly Journal of the Royal Meteorological Society*, *146*(727), 748–761. https://doi.org/10.1002/qj.3706
6. Coppola, E., Sobolowski, S., Pichelli, E., Raffaele, F., Ahrens, B., Anders, I., … Warrach-Sagi, K. (2018). A first-of-its-kind multi-model convection permitting ensemble for investigating convective phenomena over Europe and the Mediterranean. *Climate Dynamics*. https://doi.org/10.1007/s00382-018-4521-8
7. Sellevold, R., Sobolowski, S., & Li, C. (2016). Investigating Possible Arctic–Midlatitude Teleconnections in a Linear Framework. *Journal of Climate*, *29*(20), 7329–7343. https://doi.org/10.1175/JCLI-D-15-0902.1
8. Kolstad, E. W., Sobolowski, S. P., & Scaife, A. A. (2015). Intraseasonal Persistence of European Surface Temperatures. *Journal of Climate*, *28*(13), 5365–5374. https://doi.org/10.1175/JCLI-D-15-0053.1
9. Pavelsky, T. M., Sobolowski, S., Kapnick, S. B., & Barnes, J. B. (2012). Changes in orographic precipitation patterns caused by a shift from snow to rain. *Geophysical Research Letters*, *39*(18), L18706. https://doi.org/10.1029/2012GL052741
10. Sobolowski, S., & Pavelsky, T. (2012). Evaluation of present and future North American Regional Climate Change Assessment Program (NARCCAP) regional climate simulations over the southeast United States: NARCCAP PERFORMANCE. *Journal of Geophysical Research: Atmospheres*, *117*(D1), n/a-n/a. https://doi.org/10.1029/2011JD016430
11. Sobolowski, S., Gong, G., & Ting, M. (2011). Investigating the Linear and Nonlinear Stationary Wave Response to Anomalous North American Snow Cover. *Journal of the Atmospheric Sciences*, *68*(4), 904–917. https://doi.org/10.1175/2010JAS3581.1
12. Sobolowski, S., Gong, G., & Ting, M. (2010). Modeled Climate State and Dynamic Responses to Anomalous North American Snow Cover. *Journal of Climate*, *23*(3), 785–799. https://doi.org/10.1175/2009JCLI3219.1
13. Siegfried, T., Sobolowski, S., Raj, P., Fishman, R., Vasquez, V., Narula, K., … Modi, V. (2010). Modeling Irrigated Area to Increase Water, Energy, and Food Security in Semiarid India. *Weather, Climate, and Society*, *2*(4), 255–270. https://doi.org/10.1175/2010WCAS1048.1
14. Sobolowski, S., Gong, G., & Ting, M. (2007). Northern Hemisphere winter climate variability: Response to North American snow cover anomalies and orography. *Geophysical Research Letters*, *34*(16). https://doi.org/10.1029/2007GL030573
15. Sobolowski, S., & Frei, A. (2007). Lagged relationships between North American snow mass and atmospheric teleconnection indices. *International Journal of Climatology*, *27*(2), 221–231. https://doi.org/10.1002/joc.1395

**SELECTED INVITED TALKS**

[In addition, I have over 60 conference proceedings at EGU, AGU, EMS, ECCA and other smaller conferences & workshops]

*2022* Sobolowski, S., How does climate change make storms more dangerous? *Warmer, Wetter and Wilder: Climate Festival https://www.varmerevaterevillere.no/,* 9, March, Bergen, Norway

*2021* Sobolowski, S., Planned CONFER research on WRF downscaling of seasonal forecasts. *Foundational climate prediction training workshop (CONFER/ICPAC/MetOffice)*, 16, Nov., online

*2021* Sobolowski, S. (keynote talk), The CORDEX-FPS Convection multi-model ensemble over the greater Alpine region: accomplishments, challenges, and outlook. *The Fifth Convection-Permitting Modeling Workshop 2021 (CPM2021),* 7-9, Sept., online

*2020* Sobolowski, S., Understanding weather extremes in a changing climate. *IUMI Webinar: Extreme weather - Does the maritime industry need to prepare for a "new normal"?* 12, March, online

*2019* Sobolowski, S., Addressing the usability gap: critical challenges in transitioning from research to services and applications. *5th Conference on Modelling Hydrology, Climate and Land Surface Processes.* 17-19, Sept. Lillehammer, Norway

*2019* Sobolowski, S. and C. Li, Weather and climate extremes in a changing climate. *Norwegian Hull Club Global Energy and Special Risks Seminar*. 7, February, London, UK

*2018* Sobolowski, S. et al., The WCRP-CORDEX Flagship Pilot Study on Convection year two update: successes, challenges and the way forward. *GEWEX Workshop on Convection Permitting Modeling*. 4-6, Sept. Boulder, CO USA

*2018* Sobolowski, S., Coppola, E., et al., A first-of-its-kind multi-model convection permitting ensemble for investigating convective phenomena over Europe and the Mediterranean. *European Geophysical Union annual meeting,* April, Vienna, Austria

*2017* Sobolowski, S., Developing Climate Services in Norway: experiences, successes and challenges. *Rossby Center 20yr. Anniversary*. 13-14 Sept. SMHI, Norrköping, Sweden

*2016* Sobolowski, S et al., Coordinated high resolution modeling of convective phenomena over Europe and the Mediterranean. *GEWEX Workshop on Convection Permitting Modeling*. 6-8, September, Boulder, CO USA

*2016* Sobolowski, S et al., Precipitation seasonality, variability and associated dynamical processes over eastern Africa. *International Conference on Regional Climate – CORDEX*, May 17-20, Stockholm, Sweden

*2014* Sobolowski, S. Why the +2C target matters. Tekna 2 Grader Magasin launch seminar, Nov. 20, NTNU, Trondheim, Norway

*2012* Sobolowski, S, and T Pavelsky (invited), Evaluation of present and future North American Regional Climate Change Assessment Program (NARCCAP) regional climate simulations over the southeast United States. *American Geophysical Union Fall 2012 Meeting*, 3-7, Dec., San Francisco, CA, USA

## TEACHING, SUMMER SCHOOLS & WORKSHOPS

*2020* Klimathon II: A Solutions Oriented Workshop for Climate Services to Norwegian Communities, Bergen, Norway. Organized by: Reeve, M., Kvamsås, H., Sobolowski, S., Schrage, J., Waage, S., Omdahl, L., and S. Neby

*2018* Klimathon: A Solutions Oriented Workshop for Climate Services to Norwegian Communities, Bergen, Norway, Organized by: Reeve, M., Kvamsås, H., Sobolowski, S., Kolstad, E., Vandvik, T., and S. Neby

*2017* CHESS: Land surface modeling course, GFI Bergen, Norway, Lecturer: Hydrology

*2017* Bergen Summer Research School, Bergen, Norway. Lecturer: Climate Services

*2016* Arctic-CORDEX annual meeting and workshop. Organized by: Sobolowski,S., Adakudlu, M., Rinke, A. and J. Casanno. 28-30, Nov., Bergen, Norway

*2016* R3 Stakeholder workshop. Organized by: Sobolowski, S., Neby, S. and E. Kolstad. 1, Sept. Bergen, Norway

*2016* Bergen Summer Research School. Lecturer: European water resources in an uncertain future. 20, June, Bergen, Norway

*2014* ResClim-IMPACT2C Summer School. Lecturer and person responsible for course design and content, logistics and organization. June 29-July 4, Rosendal, Norway

*2013* IMPACT2C summer school. Organized by: Preuschmann, S., Jacob, D., and S. Sobolowski (Lecturers and persons responsible for course design and content, logistics and organization), August 26-September 1, Lunenburg, Germany

*2011* Asian Disaster Preparedness Center's joint Bjernkes/NCAR WRF-workshop, Organized by: Mesquita, M., Sobolowski, S., King, M. and T. Lunde. 10-20, October, Bangkok, Thailand

*2010* Guest Lecturer, GEOL 109 The Science of Climate Change, University of North Carolina, Chapel Hill, NC, USA

*2010* Teaching Assistant, CIEE E3250 Hydrosystems Engineering, Columbia University, NYC, NY, USA

*2009* Teaching Assistant, ENVP 6115 Climatology, Columbia University, NYC, NY, USA

*2009* Teaching Assistant, ENVP 6116 Hydrology, Columbia University, NYC, NY, USA

*2009* Teaching Assistant, CIEE E3250 Hydrosystems Engineering, Columbia University, NYC, NY, USA

## COMMISSIONS OF TRUST

| Year | Description - Role |
|---|---|
| 2022- | WCRP Global Precipitation Experiment (GPEX) Tiger Team and Scientific advisory committee |
| 2021- | Regional Focal Point (RFP) for the WCRP consultation in Europe and Western Asia |
| 2020- | Scientific Advisory Committee, Calendars [ERC, nr. 804150] |
| 2020- | Member, Working Group for the WCRP Regional Information for Society core project |

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| 2020- | Member, Research Council of Norway's national reference group for for Climate, Energy and Mobility in Horizon Europe |
| 2019-2021 | Contributing Author to the IPCC Working Group I Sixth Assessment Report: Atlas Chapter: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Atlas.pdf |

## AWARDS AND FELLOWSHIPS

- NASA Earth System Science Fellowship, 2006-2009: $86,000 USD
- NSF GK-12 Fellowship 2006-2007: $30,000 USD
- Schuster Award for outstanding master's thesis, Hunter College, New York, NY, 2005
- NOAA-CREST Center Scholarship, City College, City University of New York, New York, NY, 2005: $18,000 USD
- Einhorn Scholarship, Hunter College, New York, NY, 2005: $2,500 USD

## PROFESSIONAL AFFILIATIONS AND SERVICE

Service

*2012-* Thesis examiner for 10+ M.S. candidates (University of Bergen)

*2012-* Hiring committee member for 10+ PhD, post-doc and researcher positions (University of Bergen, Uni Research AS, NORCE Norwegian Research Centre AS)

Scientific meeting organization

*2022* Convener EGU session CL2.4 Local scale climate change impacts, processes, and extremes

*2020* Convener EGU session CL2.44 Convection permitting atmospheric modeling

*2019* Co-convener EMS session UP3.5 Climate modelling

*2019* Co-convener EGU session CL5.04 Convection permitting atmospheric modeling

*2019* Co-convener EGU session AS1.4 Biases in weather and climate models: representing important sub-grid processes, understanding large-scale drivers and paths to improvement

Member

*2012-present* European Geophysical Union

*2005-present* American Geophysical Union

*2005-present* American Meteorological Society

Reviewer

Journal of Climate, Geophysical Research Letters, International Journal of Climatology, Bulletin of the American Meteorological Society (BAMS), Climate Services, JGR-Atmospheres, Earth and Planetary Science Letters, Climate Dynamics, Atmospheric Chemistry and Physics, Tellus-A, Austrian Climate Research Program (ACRP), National Science Foundation (USA), Belmont Forum expert reviewer

## FIELDWORK

*2016(Aug. 15-19)* Coordinated and participated in the initial field campaign for EVOGLAC

project (see above). Tasks: establish locations for wireless weather stations, stream gauges, ablation stakes and potential snow measurement sites.

*2016(Sep. 25-29)* Coordinated and participated in second week of EVOGLAC field work Tasks: install wireless weather station network across a glaciated valley; install stream gauges to evaluate discharge from Midtdalsbreen glacier and the Finse watershed.

## COMMUNICATION AND OUTREACH

Over the past decade I have had several national & international media mentions. These range from interviews to requests for expert advice in popular science articles to press releases. podcasts and webinars. I have also engaged in other forms of outreach such as popular science talks for the public and industry, organizing field trips for high school students and collaborating on a climate exhibit with a local museum.

***Selected Media Mentions***

*2022* *https://energiogklima.no/to-grader/ekspertintervju/oppvarmingen-merkes-over-hele-kloden/*
*2021* https://www.nrk.no/vestland/sja-vestlandsrevyen--1.15605749
*2021* How scientific networks bring cutting-edge science upfront
*2021* Tap av sjøis har nesten ingen påvirkning på været
*2021* The hidden cost of planting trees
*2020* Aims to reach 365 million people in east Africa with better climate predictions
*2020* Bane Nor tar grep etter tre snøskred på under en uke
*2019* Skogbranner i Sibir har pågått i ukesvis.
*2019* Bjerknes Climate Podcast: How to predict extreme events
*2018* ClimateEurope Webinar: Developing climate services in Scandinavia
*2015* Interview with German public radio on the impacts of a 2C world. Link here.
*2010* Water Matters: News from the Columbia Water Center, 2010. The Implications of Snowcover for Climate: A conversation with Stefan Sobolowski. Link here.