

Corey Samuel Lesk

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RESEARCH INTERESTS	Climate change, climate impacts, land-climate dynamics, agriculture, sustainability	
ACADEMIC APPOINTMENTS	Dartmouth College , Hanover, NH Neukom Institute Postdoctoral Fellow Department of Geography	2022-
EDUCATION	Columbia University , New York, NY <i>PhD</i> , Earth and Environmental Science <i>MPhil</i> , Earth and Environmental Science Advisor: Radley Horton Thesis: New insights on how changing hydroclimate might affect crop yields -- and a way to avoid the worst of it	2022 2020
	McGill University , Montréal, QC <i>BSc</i> , Earth System Science	2011-2015
RESEARCH EXPERIENCE	<i>Research Assistant</i> Center for climate systems research, NASA GISS, New York, NY The Earth Institute, Columbia University	2015-2017
	<i>Research Assistant</i> Land use and global environment lab, McGill University	2012-2015
	<i>Research Assistant</i> Landscape ecology lab, McGill University	2013-2015
TEACHING	<i>Instructor</i> Climate System and Climate Change, Science Honors Program, Columbia University	2019-2021
	<i>Instructor</i> Data Analysis for Environmental Science, Double Discovery Center, Columbia University	2019
	<i>Lab Instructor</i> Quantitative Methods, Climate and Society MA program, Columbia University	2018-2019
PUBLICATIONS	<i>In Progress</i> Lesk C , Anderson W, Rigden A, Coast O, Jägermeyr J, McDermid S, Davis KF, Konar M. Compound heat and moisture extreme impacts on global crop yields under climate change. <i>In review</i> . Lesk C , Csala D, Krekeler R, Sgouridis S, Levesque A, Mach KJ, Horton R. Mitigation and adaptation emissions embedded in the transition to a stable climate. <i>In review</i> . Ting M, Lesk C , Liu C, Li C, Horton RM, Coffel ED, Rogers CDW, Singh D. Extreme Dry and Humid Heat Impact on US Corn and Soybean Yields. <i>Submitted</i> .	

Kornhuber K, **Lesk C**, Jaegermeyr J, Schleussner C, Pfeleiderer P, Horton RM. Compounding temperature and rainfall extremes modulated by recurrent jet regimes and their impact on crop production under current and future climates. *Submitted*.

Published

Coffel E, **Lesk C**, Mankin J. Earth System Model Overestimation of Cropland Temperatures Scales with Agricultural Intensity." *Geophysical Research Letters* (2022) <https://doi.org/10.1029/2021GL097135>

Lesk C, Kornhuber K. An effective clean energy transition must anticipate growing climate disruptions. *Environmental Research: Climate* (2022). <https://doi.org/10.1088/2752-5295/ac76db>

Coffel ED, **Lesk C**, Winter JM, Osterberg EC, Mankin JS. Crop-climate feedbacks boost US maize and soy yields. *Environmental Research Letters* (2022). <https://doi.org/10.1088/1748-9326/ac4aa0>

Lesk C, Coffel ED, Winter JM, Ray DK, Zscheischler J, Seneviratne SI, Horton RM. Stronger temperature–moisture couplings exacerbate the impact of climate warming on global crop yields. *Nature Food*, 2021. <https://doi.org/10.1038/s43016-021-00341-6>

Lesk C, Anderson, W. Decadal variability modulates trends in concurrent heat and drought over global croplands. *Environmental Research Letters*, 2021. <https://doi.org/10.1088/1748-9326/abeb35>

Teitelbaum CS, Sirén AP, Coffel ED, Foster JR, Frair JL, Hinton JW, Horton RM, Kramer DW, **Lesk C**, Raymond C, Wattles DW. Habitat use as indicator of adaptive capacity to climate change. *Diversity and Distributions*, 2021. <https://doi.org/10.1111/ddi.13223>

Greenford DH, Crownshaw T, **Lesk C**, Stadler K, Matthews D. Shifting economic activity to services has limited potential to reduce global environmental impacts due to the household consumption of labour. *Environmental Research Letters*, 2020. <https://doi.org/10.1088/1748-9326/ab7f63>

Lesk C, Coffel E, Horton RM. 2020. Net benefits to US soy and maize yields from intensifying hourly rainfall. *Nature Climate Change*, 2020. <https://doi.org/10.1038/s41558-020-0830-0>

Kornhuber K, Coumou D, Vogel E, **Lesk C**, Donges JF, Lehmann J, Horton RM. Amplified Rossby waves enhance risk of concurrent heatwaves in major breadbasket regions. *Nature Climate Change*, 2020. <https://doi.org/10.1038/s41558-019-0637-z>

Coffel ED, Keith B, **Lesk C**, Horton RM, Bower E, Lee J, Mankin JS. Future hot and dry years worsen Nile Basin water scarcity despite projected precipitation increases. *Earth's Future*, 2019. <https://doi.org/10.1029/2019EF001247>

Heaney AK, Carrión D, Burkart K, **Lesk C**, Jack D. Climate change and physical activity: estimated impacts of ambient temperatures on bikeshare usage in New York City. *Environmental health perspectives*, 2019. <https://doi.org/10.1289/EHP4039>

Mandle L, Wolny S, Bhagabati N, Helsingen H, Hamel P, Bartlett R, Dixon A, Horton RM, **Lesk C**, Manley D, De Mel M. Assessing ecosystem service provision under climate change to support conservation and development planning in Myanmar. *PloS one*, 2017. <https://doi.org/10.1371/journal.pone.0184951>

Lesk C, Coffel E, D'Amato A, Dodds K, and Horton RM. Threats to North American forests from southern pine beetle with warming winters. *Nature Climate Change*, 2017. <https://doi.org/10.1038/nclimate3375>

Chen K, Horton RM, Bader DA, **Lesk C**, Jiang L, Jones B, Zhou L, Chen X, Bi J, Kinney PL. Impact of climate change on heat-related mortality in Jiangsu Province, China. *Environmental Pollution*, 2017. <https://doi.org/10.1016/j.envpol.2017.02.011>

Fox TA, Rhemtulla JM, Ramankutty N, **Lesk C**, Coyle T, Kunhamu TK. Agricultural land-use change in Kerala, India: Perspectives from above and below the canopy. *Agriculture, Ecosystems & Environment*, 2017. <https://doi.org/10.1016/j.agee.2017.05.002>

Horton RM, Mankin JS, **Lesk C**, Coffel E, Raymond C. A review of recent advances in research on extreme heat events. *Current Climate Change Reports*, 2016. <https://doi.org/10.1007/s40641-016-0042-x>

Lesk C, Rowhani P, Ramankutty N. Influence of extreme weather disasters on global crop production. *Nature*, 2016. <https://doi.org/10.1038/nature16467>

Reports and book chapters

Raymond C, Coumou D, Foreman T, King A, Kornhuber K, **Lesk C**, Mora C, Perkins-Kirkpatrick S, Russo S, Vijverberg S. Projections and hazards of future extreme heat. Planning for Climate Change Hazards. *In The Oxford Handbook of Planning for Climate Change Hazards*, 2019. <https://doi.org/10.1093/oxfordhb/9780190455811.013.59>

Schumacher P, Garstecki T, Mislimeshoeva B, Morrison J, Ibele B, **Lesk C**, Dzhumabaeva S, Bulbulshoev U, Martin S. Using the Open Standards-Based Framework for Planning and Implementing Ecosystem-Based Adaptation Projects in the High Mountainous Regions of Central Asia. *In Theory and Practice of Climate Adaptation* (pp. 23-48). Springer, Cham, 2018. https://doi.org/10.1007/978-3-319-72874-2_2

Horton RM, De Mel M, Peters D, **Lesk C**, Bartlett R, Helsing H, Bader D, Capizzi P, Martin S, and Rosenzweig C. Assessing Climate Risk in Myanmar: Technical Report. New York, NY, USA: Center for Climate Systems Research at Columbia University, WWF-US and WWF-Myanmar, 2017.

PRESENTATIONS

Lesk C, Csala D, Krekeler R, Sgouridis S, Levesque A, Mach KJ, Horen Greenford D, Matthews HD, Horton R. Mitigation and adaptation emissions embedded in the broader climate transition. European Geophysical Union General Assembly, 23-27 June 2022.

Lesk C, Csala D, Krekeler R, Sgouridis S, Levesque A, Mach KJ, Horen Greenford D, Matthews HD, Horton R. Mitigation and adaptation emissions embedded in the broader climate transition. American Geophysical Union Fall Meeting, 13-17 December 2021.

Lesk C, Csala D, Krekeler R, Sgouridis S, Levesque A, Mach KJ, Horton R. Greenhouse gas emissions embedded in the transition to a stable climate. Managed Retreat Conference, Columbia University, 25 June 2021.

Lesk C. Greenhouse gas emissions embedded in the transition to a stable climate. New era network for societally integrated climatology, 24 February 2021. **Invited seminar.**

Lesk C, Coffel E, Winter JM, Zscheischler J, Seneviratne SI, Ray DK, Horton RM. The hidden signature of temperature-moisture couplings in the heat sensitivity of global crops. Compound Weather and Climate Events Workshop, Bern, Switzerland, 15 January 2021.

Lesk C, Coffel E, Winter JM, Zscheischler J, Seneviratne SI, Ray DK, Horton RM. The hidden signature of temperature-moisture couplings in the heat sensitivity of global crops. American Geophysical Union Fall Meeting, 1-17 December 2020.

Lesk, C. Not all bad: New insights on how changing hydroclimate might affect crop yields. International Research Institute for Climate and Society Seminar, 25 February 2020. **Invited seminar.**

Lesk C, Coffel E, Winter JM, Ray D, Horton RM. Joint impacts of heat and moisture on global crop yields. American Meteorological Society Annual Meeting, 12-17 January 2020, Boston, USA.

Lesk C, Coffel E, Horton RM. Net benefits to US crop yields from intensifying hourly rainfall. American Meteorological Society Annual Meeting, 12-17 January 2020, Boston, USA.

Lesk C, Coffel E, Winter JM, Ray DK, Horton RM. Disentangling the joint impacts of heat and moisture on global crop yield variability. Workshop on Correlated Extremes, 29-31 May 2019, New York, USA.

Lesk C, Coffel E, Horton RM. Sensitivity of maize yields to sub-seasonal rainfall distribution and extremes in the United States. European Geosciences Union General Assembly, 10-14 April 2018, Vienna, Austria.

Lesk C, Rowhani P, Champalle C, Ramankutty N. Estimating impacts of extreme weather on agricultural production. McGill Global Food Security Conference, 9 October 2013, Montreal, Canada.

Lesk C, Fox T, Coyle T, Ramankutty N, and Rhemtulla J. Tree species diversity in homegardens of Kerala. Special Meeting of the International Biogeographical Society, 16 November 2013, Montreal, Canada.

AWARDS AND FELLOWSHIPS	Fonds de recherche du Québec Postdoctoral Fellowship	2022
	Neukom Institute Postdoctoral Fellowship	2022
	Northeast Climate Adaptation Science Center Fellowship	2021
	National Science Foundation Graduate Research Fellowship	2018-2021
	Columbia University Dean's Fellowship	2017
	McGill University Earth System Science Research Award	2014
	McGill University Earth System Science Research Award	2013
	NSERC Undergraduate Summer Research Award	2013
	Dean's Honours List, McGill University	2012
	Bubar Family Scholarship for the Earth Sciences	2012
NSERC Undergraduate Summer Research Award	2012	

COMMUNICATION
AND OUTREACH

Media coverage and interviews: [New York Times](#), [Nature News](#), [Vice](#), [Mother Jones](#), [Radio-Canada](#), [Carbon Brief](#), [Climate Central](#), [Inside Climate News](#), [Daily Beast](#), [Live Science](#), [phys.org](#), [KAKE News](#), [Yale Environment 360](#), among others.

Op-Eds, debates, podcasts: Op-Eds in [The Montreal Gazette](#) and [Al Jazeera](#), guest on For the Wild podcast, fact-checker for 2021 Canadian federal election climate debates

Trainings: Using climate information for ecosystem-based adaptation, Deutsche Gesellschaft für Internationale Zusammenarbeit, Tajikistan, 2017
Climate information for adaptation, Department of Meteorology, Myanmar, 2017

SERVICE	<i>Organizing:</i> Student Workers of Columbia-UAW Local 2110	2018-2021
	Lamont 'TG' colloquium reception	2018-2020
	Global Week for the Future Climate Strike	2019
	<i>Science Fair Judging:</i> New Orleans Charter Science & Mathematics High School Science Fair	2020
	<i>Peer review:</i> Nature Communications, Nature Food, Earth System Discussions, Agriculture and Forest Meteorology, Weather and Climate Extremes, Science of the Total Environment, Pest Management Science, Journal of Pest Science.	2018-2022
	<i>Mentorship:</i> Rhys Murray (undergrad research, extreme rainfall)	2021
	Tess Walther (Lamont first-year mentee)	2021
Anton Safonov (high school research, concrete emissions)	2020-2021	
Bryn Stecher (Women in science at Columbia mentee)	2020-2021	
Connor Diaz (Lamont undergrad mentor program)	2020	
Sophie Billinge (undergrad research, agrobiodiversity)	2018-2019	

SKILLS

Computing: Python, R, Matlab, Jupyter, Pandas, QGIS, ENVI
Data: Climate model ensembles, reanalysis, geospatial crop data, emissions inventories
Language: French (fluent)
Other useful: Construction (carpentry, tile, sheetrock, plaster, plumbing, log building)
Wilderness (canoeing, camp craft, first aid, rescue, navigation, fishing)