Corey Samuel Lesk

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RESEARCH INTERESTS

Climate change, climate impacts, land-climate dynamics, agriculture, sustainability

EDUCATION

Columbia University, New York, NY
PhD, Earth and Environmental Science 2022
MPhil, Earth and Environmental Science 2020
Advisor: Radley Horton
Thesis: New insights on how changing hydroclimate might affect crop yields -- and a way to avoid the worst of it

McGill University, Montréal, QC
BSc, Earth System Science 2011-2015

RESEARCH EXPERIENCE

Research Assistant 2015-2017
Center for climate systems research, NASA GISS, New York, NY
The Earth Institute, Columbia University

Research Assistant 2012-2015
Land use and global environment lab, McGill University

Research Assistant 2013-2015
Landscape ecology lab, McGill University

TEACHING

Instructor 2019-2021
Climate System and Climate Change, Science Honors Program, Columbia University

Instructor 2019
Data Analysis for Environmental Science, Double Discovery Center, Columbia University

Lab Instructor 2018-2019
Quantitative Methods, Climate and Society MA program, Columbia University

PUBLICATIONS

In Progress

Lesk C, Kornhuber K. An effective clean energy transition must anticipate growing climate disruptions. *Environmental Research Climate*. *Accepted.*

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. *Submitted*.

Kornhuber K, **Lesk C**, Jaegermeyr J, Schleussner C, Pfleiderer 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*.

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. *In review.*

Coffel E, **Lesk C**, Mankin J. Amplified CMIP6 Temperature Biases Over Global Cropland. *Revising.*

Published

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, Mislimshoeva 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, Helsingen 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 seminar, 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. Workshop on Compound Weather and Climate Events, 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 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

Organizing:	Student Workers of Columbia-UAW Local 2110	2018-2021
	Lamont 'TG' colloquium reception	2018-2020
	Global Week for the Future Climate Strike	2019
Science Fair Judging:	New Orleans Charter Science & Mathematics High School Science Fair	2020
Peer review:	Nature Communications, Earth System Discussions, Weather and Climate Extremes, Science of the Total Environment, Pest Management Science, Journal of Pest Science.	2018-2021
Mentorship:	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)