

Drew Pendergrass

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LSRC A152
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Durham, NC 27710

EDUCATION

Ph.D. Harvard University, Environmental Science and Engineering 2025
B.A. *summa cum laude*, Harvard University, Physics and Mathematics; minor in English. 2020

PROFESSIONAL APPOINTMENTS

Assistant Professor of Environmental Studies and Sciences Starting July 2026
Oberlin College

Postdoctoral scientist (NSF AGS fellowship) 2025 – 2026
Duke University (*Advisor: Drew Shindell*)

Graduate research assistant (NSF GRFP) 2020 – 2025
Harvard University (*Advisor: Daniel Jacob*)

HONORS AND AWARDS

NSF Atmospheric and Geospace Science Postdoctoral Fellowship (\$202,000) 2025
NOAA Climate and Global Change (C&GC) Fellowship selection 2025
No funds awarded to any 2025 selected candidates due to budget shortfall

CASE Grand Gold Circle of Excellence Award for column and opinion writing 2021
Stonington Graduate Fellowship in Environmental Science and Engineering 2020-21

NSF Graduate Research Fellowship (GRFP) 2020
Phi Beta Kappa 2019
NOAA Ernest F. Hollings Scholarship 2018
Jacob Wendell Scholarship Prize 2018
National Merit Scholarship 2016

NATURAL SCIENCE PUBLICATIONS (*in review; †student advisee author)

Citations: 379. h-index: 11. ([Google Scholar](#)). Corresponding authorship denoted by ‡.

- *23. **Shek, S. Y. T.†, D. C. Pendergrass‡**, L. J. Mickley, E. Beaudry, S. Zhai, A. P. K. Tai. Impact of meteorology and transboundary transport on fine particulate matter (PM_{2.5}) concentration and composition in Japan: Evidence from asynchronous 2020 lockdowns. *In review at Journal of Geophysical Research: Atmospheres*.
- *22. **Li, Y.†, D. C. Pendergrass**, D. J. Jacob, Y. Tang, J. Qiu, and B. Zheng. Trends and drivers of China's methane emissions 2019–2024 inferred from regional atmospheric inversion. *In review at Atmospheric Chemistry and Physics*.
21. He, M., Jacob, D. J., Estrada, L. A., Varon, D. J., Sulprizio, M., Balasus, N., East, J. D., Penn, E., **Pendergrass, D. C.**, Chen, Z., Mooring, T. A., Maasackers, J. D., Brodrick, P. G., Frankenberg, C., Bowman, K. W., & Bruhwiler, L. (2026). Attributing 2019–2024 methane

- growth using TROPOMI satellite observations. *Science Advances*, 12(15), eadz9007. doi:10.1126/sciadv.adz9007.
20. Lee, J., Kim, J., Cho, Y., Lee, S., **Pendergrass, D. C.**, Jacob, D. J., Lim, H., Jung, H. C., Myung, K.-M., Kim, Y.-D., Han, K. M., & Koo, J.-H. (2026). Evaluation for the machine learning based PM_{2.5} estimation using different spatial resolution of geostationary satellite AOD over megacities in Korea. *Atmospheric Environment*, 373, 121941. doi:10.1016/j.atmosenv.2026.121941.
 19. Colombi, N. K., Jacob, D. J., Ye, X., Yantosca, R. M., Bates, K. H., **Pendergrass, D. C.**, Yang, L. H., Li, K., & Liao, H. (2026). Large and increasing stratospheric contribution to tropospheric ozone over East Asia. *Atmospheric Chemistry and Physics*, 26(4), 2623–2633. doi:10.5194/acp-26-2623-2026
 18. Varon, D. J., Jacob, D. J., Estrada, L. A., Balasus, N., East, J. D., **Pendergrass, D. C.**, Chen, Z., Sulprizio, M., Omara, M., Gautam, R., Barkley, Z. R., Saldaña, F. J. C., Reidy, E. K., Kamdar, H., Sherwin, E. D., Biraud, S. C., Jervis, D., Pandey, S., Worden, J. R., ... Kleinberg, R. L. (2025). Seasonality and Declining Intensity of Methane Emissions from the Permian and Nearby US Oil and Gas Basins. *Environmental Science & Technology*. doi:10.1021/acs.est.5c08745
 17. **Pendergrass, D. C.**, Jacob, D. J., Balasus, N., Estrada, L., Varon, D. J., East, J. D., He, M., Mooring, T. A., Penn, E., Nesser, H., & Worden, J. R. (2025). Trends and seasonality of 2019–2023 global methane emissions inferred from a localized ensemble transform Kalman filter (CHEEREIO v1.3.1) applied to TROPOMI satellite observations. *Atmospheric Chemistry and Physics*, 25(21), 14353–14369. <https://doi.org/10.5194/acp-25-14353-2025>
 16. **Pendergrass, D. C.**, Jacob, D. J., Oak, Y. J., Dang, R., Yang, L. H., Beaudry, E., Colombi, N. K., Zhai, S., Kim, H., Choi, J., Park, J., Kim, S., Li, K., & Liao, H. (2025). Wintertime Trends of Fine Particulate Matter (PM_{2.5}) in South Korea, 2012–2022: Response of Nitrate and Organic Components to Decreasing NO_x Emissions. *Geophysical Research Letters*, 52(19), e2025GL116091. doi:10.1029/2025GL116091
 15. Voshtani, S., Jones, D. B. A., Wunch, D., **Pendergrass, D. C.**, Wennberg, P. O., Pollard, D. F., Morino, I., Ohyama, H., Deutscher, N. M., Hase, F., Sussmann, R., Weidmann, D., Kivi, R., García, O., Té, Y., Chen, J., Anderson, K., Stevens, R., Kondragunta, S., ... Murata, I. (2025). Quantifying CO emissions from boreal wildfires by assimilating TROPOMI and TCCON observations. *Atmospheric Chemistry and Physics*, 25(21), 15527–15565. doi:10.5194/acp-25-15527-2025
 14. Beaudry, E., Jacob, D. J., Bates, K. H., Zhai, S., Yang, L. H., **Pendergrass, D. C.**, Colombi, N., Simpson, I. J., Wisthaler, A., Hopkins, J. R., Li, K., & Liao, H. (2025). Ethanol and Methanol in South Korea and China: Evidence for Large Anthropogenic Emissions Missing from Current Inventories. *ACS ES&T Air*. doi:10.1021/acsestair.4c00210.
 13. Oak, Y. J., Jacob, D. J., **Pendergrass, D. C.**, Dang, R., Colombi, N. K., Chong, H., Lee, S., Kuk, S. K., & Kim, J. (2025). Air quality trends and regimes in South Korea inferred from 2015–2023 surface and satellite observations. *Atmospheric Chemistry and Physics*, 25(5), 3233–3252. doi:10.5194/acp-25-3233-2025
 12. Yang, L. H., Jacob, D. J., Lin, H., Dang, R., Bates, K. H., East, J. D., Travis, K. R., **Pendergrass, D. C.**, & Murray, L. T. (2025). Assessment of Hydrogen's Climate Impact Is Affected by Model OH Biases. *Geophysical Research Letters*, 52(5), e2024GL112445. doi:10.1029/2024GL112445
 11. **Pendergrass, D. C.**, Jacob, D. J., Oak, Y. J., Lee, J., Kim, M., Kim, J., Lee, S., Zhai, S., Irie, H., & Liao, H. (2025). A continuous 2011–2022 record of fine particulate matter (PM_{2.5}) in East Asia at daily 2-km resolution from geostationary satellite observations: Population exposure

- and long-term trends. *Atmospheric Environment*, 346, 121068. doi:10.1016/j.atmosenv.2025.121068
10. Dang, R., Jacob, D. J., Zhai, S., Yang, L. H., **Pendergrass, D. C.**, Coheur, P., Clarisse, L., Van Damme, M., Choi, J., Park, J., Liu, Z., Xie, P., & Liao, H. (2024). A Satellite-Based Indicator for Diagnosing Particulate Nitrate Sensitivity to Precursor Emissions: Application to East Asia, Europe, and North America. *Environmental Science & Technology*. doi:10.1021/acs.est.4c08082
 9. Liu, T., **F.M. Panday†**, **M.C Caine†**, M. Kelp, **D. C. Pendergrass**, L. J. Mickley, E. A. Ellicott, M. E. Marlier, R. Ahmadov, and E. P. James (2024). Is the smoke aloft? Caveats of using the Hazard Mapping System (HMS) smoke product as a proxy of surface smoke presence across the United States. *International Journal of Wildland Fire*, 33(10). doi:10.1071/WF23148
 8. Yang, L. H., Jacob, D. J., Dang, R., Oak, Y. J., Lin, H., Kim, J., Zhai, S., Colombi, N. K., **Pendergrass, D. C.**, Beaudry, E., Shah, V., Feng, X., Yantosca, R. M., Chong, H., Park, J., Lee, H., Lee, W.-J., Kim, S., Kim, E., ... Liao, H. (2024). Interpreting Geostationary Environment Monitoring Spectrometer (GEMS) geostationary satellite observations of the diurnal variation in nitrogen dioxide (NO₂) over East Asia. *Atmospheric Chemistry and Physics*, 24(12), 7027–7039. doi:10.5194/acp-24-7027-2024.
 7. Dang, R., Jacob, D. J., Zhai, S., Coheur, P., Clarisse, L., Van Damme, M., **Pendergrass, D. C.**, Choi, J., Park, J., Liu, Z., & Liao, H. (2023). Diagnosing the Sensitivity of Particulate Nitrate to Precursor Emissions Using Satellite Observations of Ammonia and Nitrogen Dioxide. *Geophysical Research Letters*, 50(24), e2023GL105761. doi:10.1029/2023GL105761
 6. Varon, D. J., Jacob, D. J., Hmiel, B., Gautam, R., Lyon, D. R., Omara, M., Sulprizio, M., Shen, L., **Pendergrass, D. C.**, Nesser, H., Qu, Z., Barkley, Z. R., Miles, N. L., Richardson, S. J., Davis, K. J., Pandey, S., Lu, X., Lorente, A., Borsdorff, T., ... Aben, I. (2023). Continuous weekly monitoring of methane emissions from the Permian Basin by inversion of TROPOMI satellite observations. *Atmospheric Chemistry and Physics*, 23(13), 7503–7520. doi:10.5194/acp-23-7503-2023
 5. Chen, Z., Jacob, D. J., Gautam, R., Omara, M., Stavins, R. N., Stowe, R. C., Nesser, H., Sulprizio, M. P., Lorente, A., Varon, D. J., Lu, X., Shen, L., Qu, Z., **Pendergrass, D. C.**, & Hancock, S. (2023). Satellite quantification of methane emissions and oil–gas methane intensities from individual countries in the Middle East and North Africa: Implications for climate action. *Atmospheric Chemistry and Physics*, 23(10), 5945–5967. doi:10.5194/acp-23-5945-2023
 4. Zhai, S., Jacob, D. J., **Pendergrass, D. C.**, Colombi, N. K., Shah, V., Yang, L. H., Zhang, Q., Wang, S., Kim, H., Sun, Y., Choi, J.-S., Park, J.-S., Luo, G., Yu, F., Woo, J.-H., Kim, Y., Dibb, J. E., Lee, T., Han, J.-S., ... Liao, H. (2023). Coarse particulate matter air quality in East Asia: Implications for fine particulate nitrate. *Atmospheric Chemistry and Physics*, 23(7), 4271–4281. doi:10.5194/acp-23-4271-2023
 3. **Pendergrass, D. C.‡**, Jacob, D. J., Nesser, H., Varon, D. J., Sulprizio, M., Miyazaki, K., & Bowman, K. W. (2023). CHEEREIO 1.0: A versatile and user-friendly ensemble-based chemical data assimilation and emissions inversion platform for the GEOS-Chem chemical transport model. *Geoscientific Model Development*, 16(16), 4793–4810. doi:10.5194/gmd-16-4793-2023
 2. **Pendergrass, D. C.‡**, S. Zhai, J. Kim, J.-H. Koo, S. Lee, M. Bae, S. Kim, H. Liao, and D. J. Jacob. (2022). Continuous mapping of fine particulate matter (PM_{2.5}) air quality in East Asia at daily 6x6 km² resolution by application of a random forest algorithm to 2011–2019 GOCI geostationary satellite data. *Atmospheric Measurement Techniques*, 15, 1075–1091, doi: 10.5194/amt-15-1075-2022

1. **Pendergrass, D. C.**, Shen, L., Jacob, D. J., & Mickley, L. J. (2019). Predicting the Impact of Climate Change on Severe Wintertime Particulate Pollution Events in Beijing Using Extreme Value Theory. *Geophysical Research Letters*, 46(3), 1824–1830. doi: 10.1029/2018GL080102.

BOOKS (**under contract; *forthcoming).

****Pendergrass, D.C.** and Vettese, T.G.W (2027). *Every Cook Can Plan: Governing the Global Polis*. Under contract with Verso Books.

Pendergrass, D.C. and Vettese, T.G.W (2022). *Half-Earth Socialism: A Plan to Save the Future from Extinction, Climate Change and Pandemics*. Verso Books.

- **Translated into six languages:**
 - **Spanish:** Socialismo de medio planeta, published by Levanta Fuego.
 - **Thai:** โลกครึ่งใบให้สังคมนิคม, published by Sam Yan Press.
 - **Swedish:** Halvjordssocialism, published by Verbal Forlag.
 - **Korean:** 지구의 절반을 넘어서, published by 이콘.
 - **Italian:** Socialismo di Metà-Terra, published by Mimesis Edizioni.
 - ***German (October 2026):** Die halbe Erde, published by Oekom Verlag.
- **Reviewed and discussed in outlets including** the *New Statesman*, the *New Republic*, the *Ecologist*, *Jewish Currents*, *New Left Review*, *Jacobin*, *Aftonbladet*, *Terrestres*, and *Sentient Media*.

REFEREED JOURNAL ARTICLES IN SOCIAL SCIENCE (*in review)

- *3. Foramitti, J., **D. C. Pendergrass**, W. Zeug, J. Heyer. Beyond prices: multi-criteria signals for a social-ecological transformation. *In review at Ecological Economics*.
- *2. Vettese, T.G.W., C. Durand, **D. C. Pendergrass**, T. Söding, and K. Saito. The Rise of the Ecosocialist Scientist: Democratization of Knowledge for Economic and Environmental Planning. *In review at The Anthropocene Review*
1. **Pendergrass, D.C.** (2024). From planetary scenarios to planetary sensing: Models, observations, and political legibility. *The Anthropocene Review*, 20530196241270716. doi:10.1177/20530196241270716

EDITOR-REVIEWED SCHOLARLY ARTICLES AND BOOK CHAPTERS IN SOCIAL SCIENCE (*forthcoming/in review). All authorship equal.

- *6. **Pendergrass, D.C.** Radical Environmental Science. In N. Kowalsky and T. R. Kover (Eds.), *Springer Handbook of Environmental Philosophy*. Springer. (*In review*).
- *5. **Pendergrass, D.C.** Marxism, the primordial soup, and the origins of life. In T. Vettese and L. Kirts (Eds.), *The Ecosocialist Cookbook*. Haymarket. (*In review*).
- *4. **Pendergrass, D.C.** and Vettese, T.G.W. Every Cook Can Plan: Economic Democracy Against Catastrophe. In O. Halpern (Ed.), *Against Catastrophe*. (*Forthcoming*)
3. **Pendergrass, D.C.** (2025). Geoengineering. In I. Szeman and J. Wenzel (Eds.), *Power Shift: Keywords for a New Politics of Energy*. West Virginia University Press.
2. Vettese, T.G.W, **Pendergrass, D.C.**, and Mesko, F. (2022). Town, Country, and Wilderness: Designing the Half-Earth. *Architectural Design*. 92(1), 112–119. doi:10.1002/ad.2780

1. **Pendergrass, D.C.,** & Vettese, T. (2021). The Humanization of Nature and Half-Earth Socialism. *International Labor and Working-Class History*, 99, 15–23.
doi:10.1017/S0147547920000198

SELECTED CONFERENCE PRESENTATIONS IN NATURAL SCIENCE

(Details, including copies of slides/posters, online at <http://drewpendergrass.com/presentations>)

12th International GEOS-Chem Meeting (IGC12), St. Louis, Mo. TBD.	June 2026
Methane Action for People & Planet (UNEP), Ispra, Italy. Poster.	Mar. 2026
Gordon Research Conference, Newry, ME. Poster.	Aug. 2025
American Meteorological Society meeting, New Orleans, La. Talk.	Jan. 2025
American Geophysical Union Fall Meeting, Washington, D.C. Poster.	Dec. 2024
11th International GEOS-Chem Meeting (IGC11), St. Louis, Mo. Poster.	June 2024
American Meteorological Society meeting, Baltimore, Md. Poster.	Feb. 2024
GEMS science meeting, Jeju, S. Korea, Talk.	Sep. 2023
American Geophysical Union Fall Meeting, Chicago, Ill. Poster.	Dec. 2022
GEMS science meeting, Seoul, S. Korea. Talk.	Nov. 2022
10th International GEOS-Chem Meeting (IGC10), St. Louis, Mo. Talk.	June 2022
American Geophysical Union Fall Meeting, New Orleans, La. Talk.	Dec. 2021
American Geophysical Union Fall Meeting, San Francisco, Calif. Talk.	Dec. 2019
American Geophysical Union Fall Meeting, Washington D.C. Talk.	Dec. 2018

SELECTED CONFERENCE PRESENTATIONS IN SOCIAL SCIENCE

(Some recordings and details for post-2024 events online at <http://drewpendergrass.com/events>)

- “Beyond prices: multi-criteria signals for a social-ecological transformation,” US Society for Ecological Economics Conference, Oberlin College, Oberlin, OH (in person), June 2026.
- “Every Cook Can Plan,” Politics, Valorization and Technology in the High-Tech Bioeconomy workshop, Humboldt University, Berlin, Ger. (remote), July 2025. **Invited talk.**
- “Reductionism, Complexity, and Politics in Earth System Science,” Historical Epistemologies of Planetary Modeling III, Ca’Foscari Venice University, Venice, Italy (in person), June 2025.
- “From planetary scenarios to planetary sensing: models, observations, and political legibility,” American Geophysical Union Fall Meeting, Washington, D.C. (in person), December 2024.
- “Every Cook Can Plan: Economic Democracy Against Catastrophe,” Governing through Design conference, Institute for Critical Inquiry, Berlin, Ger. (in person), October 2024.
- “Three Problems with Utopia: Hayek, Kornai, Gorgias,” **Keynote, ‘Utopia and the Return of History’ conference**, Manchester University, Manchester, U.K. (in person), April 2024.
- “Salvaging the Anthropocene,” Historical Epistemologies of Planetary Modelling workshop, Max Planck Institute for the History of Science, Berlin, Ger. (remote), June 2023.
- “Iterative Democracy.” Workshop on “Socialism: Rationality and Distribution,” Free University of Berlin, Berlin, Germany (remote), June 2022.

SELECTED INVITED NATURAL SCIENCE TALKS

“Using CHEEREO,” International GEOS-Chem Meeting 12 workshop, St. Louis, Mo.	June 2026
NC State Marine, Earth, and Atmospheric Sciences Seminar Series, Raleigh, NC	Feb. 2026
Duke University Science and Culture Seminar Series, Durham, NC	Feb. 2026

Oberlin College, Oberlin, OH.	Nov. 2025
Social science/climate science workshop, Helmholtz Center (UFZ), Leipzig, Ger.	Nov. 2025
Reducetarian Summit (public lecture on methane from ag.), Atlanta, GA	Oct. 2025
Technical University of Munich, Munich, Ger.	June 2025
Helmholtz Center for Environmental Research (UFZ), Leipzig, Ger.	June 2025
“Using CHEEREO,” International GEOS-Chem Meeting 11 workshop, St. Louis, Mo.	June 2024
Yonsei University, Seoul, S. Korea (remote)	Oct. 2023
George Mason University, Fairfax, Va. (remote)	Sept. 2023
Harvard Grad Student Postdoc Seminar, Cambridge, Mass.	Feb. 2023
Ajou University, Suwon, S. Korea	Nov. 2022
Seoul National University, Seoul, S. Korea	Nov. 2022
Yonsei University, Seoul, S. Korea	Nov. 2022

SELECTED INVITED SOCIAL SCIENCE TALKS

(Some recordings and details for post-2024 events online at <http://drewpendergrass.com/events>)

In-person events for *Socialismo di Metà-Terra* (Italian translation of *Half-Earth Socialism*): **GKN factory** (Florence); **University of Bologna** “Ecologie Algoritmi Poteri” (Bologna); **Campus Luigi Einaudi** (Turin), **Rewilding Apennines** (Abruzzo), **Piano Terra** (Milan), March 2026.

“Politics of Nature,” Museum of Natural History, Berlin, Germany (in person), Feb. 2026.

“Brecht's Daoism,” Literature Forum at the Brecht House, Berlin, Germany (in person), Feb. 2026.

“János Kornai’s institutionalism,” New Institute, Hamburg, Germany (in person), June 2025.

In-person events for *Haljordsocialism* (Swedish translation of *Half-Earth Socialism*): **Bokcafé Pilgatan** (Umeå) and **Hägerstensåsens Medborgarhus** (Stockholm), June 2025.

“Museum of the Future,” Muséum National d’Histoire Naturelle, Paris (in person), May 2024.

“Economic Planning,” transformleurope (Foundation of European Left; Party remote). April 2024.

Virtual events for 지구의 절반을 넘어서 (Korean translation of *Half-Earth Socialism*): **Institute for Political and Economic Alternatives** (Seoul, South Korea) and Global Marxism Online Talks series, **Gyeongsang National University** (Jinsu, South Korea). 2023.

“Planning and the environmental crisis,” U. Mass., Amherst, Mass. (in person). May 2023.

Selected events for *Half-Earth Socialism*: **Santa Clara University**, Santa Clara, Calif. (remote); **Housman Books**, London, U.K. (in person); **University of Groningen**, Groningen, Neth. (in person); **Diffrakt**, Berlin, Ger. (in person); **Greenpoint Library**, Brooklyn, N.Y. (in person); **Jain Family Institute**, New York, N.Y. (remote); Ground Lab at the **Architectural Association School of Architecture**, London, U.K. (remote); Independent Cinema Office, London, U.K. (remote); **Port Reyes Books**, West Marin, Calif. (remote), **McNally Jackson Books**, New York, N.Y. (remote), **Animal Liberation Currents** (magazine, remote event), **Bookmarks Bookshop**, London, U.K. (remote); **Connecticut Public Libraries**, Westport, Conn. (remote); and History and Theory of Capitalism Workshop, **University of Chicago**, Chicago, Ill. (remote). 2022-2024.

“Design, Democracy, and Planning in the Anthropocene,” **Advanced Architectural Design Arguments series at Columbia University**, New York, NY (in person). July 2023.

“Utopias,” Outer Coast College, Sitka, Alaska (remote). December 2022.

“Utopias,” **Ethics, Religion and Society Program Distinguished Speakers Series at Xavier University**, Cincinnati, Ohio (in person). October 2022.

“Eco-Socialist Futures” panel at the Socialism Conference, Chicago, Ill. (in person). October 2022.

TEACHING AND MENTORSHIP EXPERIENCE

As teaching fellow:

Intro to Enviro. Engineering; **Harvard**, Spring 2023. Profs. Frank Keutsch and Bryan Yoon
Atmospheric Chemistry and Physics (graduate-level); **Harvard**, Fall 2021. Prof. Steve Wofsy

Professional development:

Teaching certificate from Harvard Derek Bok Center for Teaching & Learning, Spring 2025

Natural science research mentorship:

Yifan Li (Tsinghua Shenzhen Intl. Grad. School, visiting PhD student) Oct. 2024 – July 2025
Project: Drivers of methane emissions in China after 2019. **Work led to first-authorship.**

Stephen Shek (Chinese University of Hong Kong, class of 2026) Jan. 2024 – Present
Project: Impact of COVID-19 on PM_{2.5} air pollution in Japan. **Work led to first-authorship.**

Greta Schultz (University of Wisconsin, class of 2025) June 2023 – Aug. 2023
Project: Mobile Monitoring for California Wildfire Smoke. **Presented at AMS 2024.**

Maggie Schultz (Harvard University, class of 2022) Jan. 2022 – Dec. 2022
Project: Downscaling real-time pollution data. **Senior engineering thesis.**

Sanjna Kedia (Harvard University, class of 2025) Jan. 2022 – Aug. 2022
Project: Wildfire smoke detection with deep learning.

Lewis McAllister (Harvard University, class of 2022) June 2021 – Jan. 2022
Project: Extreme springtime particulate formation events over South Korean farmland.

Marie Panday (University of Maryland, class of 2022) June 2021 – Aug. 2021
Project: Satellite vs. surface smoke data. **Presented at AGU 2021; work led to co-authorship on manuscript.**

Miah Caine (Harvard University, class of 2023) June 2020 – May 2021
Project: Satellite vs. surface smoke data. **Work led to co-authorship on two manuscripts.**

Kent Toshima (Harvard University, class of 2021) June 2020 – Aug. 2021
Project: Wildfire smoke detection with deep learning.

Educational video game design

Half-Earth Socialism video game (<https://play.half.earth/>) 2021 – 2022
Project: Cli-fi game **played by over 200,000 people**; available in **eight languages**: Japanese, Portuguese, Spanish, Italian, French, German, Turkish, and Thai; **exhibited at** Wolfsburg Kunst Museum, Castello di Rivoli Museo d'Arte Contemporanea (Turin), and Le Commun (Geneva).

SELECTED JOURNALISM: OP-EDS, ESSAYS, AND REPORTING

(All articles linked online at <http://drewpendergrass.com/writing-profile>)

"Unbuilding Italy," *Verso Blog*, April 2025. Co-written with Troy Vettese.

"The Loud Part the IPCC Said Quietly," *African Arguments*, March 2023.

"Planning An Eco-Socialist Utopia," *Noema Magazine*, June 2022. Co-written with Troy Vettese.

"Half-Earth Socialism's Five Book Plan," *Verso Blog*, May 2022. Co-written with Troy Vettese.
 "Towards Half-Earth Socialism," contribution to GTI Forum "Conservation at the Crossroads." *Great Transition Initiative*, May 2022. Co-written with Troy Vettese.
 "A planned economy is the only way to save the planet. Here's how," *Open Democracy*, April 2022. Co-written with Troy Vettese.
 "Our global fire crisis is the sign of a dying biosphere. But we can take action," *The Guardian*, December 2020. Co-written with Troy Vettese.
"Ground Control," *Harper's Magazine* [reported feature article], June 2020
 "Covid-19 and the Environmental Crisis are Inseparable," *Jacobin*, May 2020. Co-written with Troy Vettese. *Translated into Spanish, Portuguese, and Turkish*

SELECTED INTERVIEWS AND MEDIA APPEARANCES

(All links, recordings, and videos available at <http://drewpendergrass.com/interviews>)

What's Wrong With (podcast)	9 July 2024
City Atlas (podcast)	13 Apr 2024
Socialist Standard (newspaper interview)	1 Jul 2023
Behind the News, KPFA Radio	13 October 2022
Against the Grain, KPFA Radio	19 September 2022
Cultures of Energy (podcast)	13 September 2022
Species Unite (podcast)	7 Jul, 2022
A World to Win (podcast)	16 June 2022
Tech Won't Save Us (podcast)	12 May 2022
Green New Deal Media (podcast)	9 May 2022
Tocqueville 21 (blog interview)	9 May 2022
NovaraFM (podcast)	5 May 2022
Digging in the Dirt, WPKN Radio	18 April 2022
Future Histories (podcast)	17 April 2022
Storytelling Animals (podcast)	4 April 2022

ACADEMIC LEADERSHIP AND SERVICE

International:

Co-leader of [Statistical Learning in Atmospheric Chemistry](#) (SLAC) group and monthly online seminar series (2022 – present).

Proposal reviewer for NSF (2025 and 2026).

Peer reviewer for *Atmospheric Chemistry and Physics*, *npj Climate and Atmospheric Science*, *Environmental Research Letters*, *Geoscientific Model Development*, *Journal of Advances in Modeling Earth Systems*, *Nature Scientific Data*, *Environmental Research*, *Competition and Change*, *Journal of Environmental Management*, *Global and Planetary Change*, *Aerosol and Air Quality Research*, *ACS Earth and Space Chemistry*, *ACS Environmental Au*, *Environmental Research Communications*, *Journal of Geophysical Research: Machine Learning*, and *Environmental Science and Technology*.

Institutional:**Harvard:**

Grad student rep. for Harvard EPS/ESE culture review committee	2023 – 2024
Steward for Harvard Graduate Student Union	2021 –2025
Co-president of GeoClub (Harvard grad students in Earth Science)	2022 – 2024
Co-leader of Jacob Lab Diversity, Inclusion, and Belonging team	2021 – 2024
Co-leader of the Jacob Lab’s machine learning subgroup	2021 – 2022

Memberships

International Society for Ecological Economics	2026 –
American Meteorological Society	2021 –
American Geophysical Union	2018 –

Last updated April 2026.