Stanford
Environmental Research

2022 Peer-reviewed Publications

Stanford Woods Institute for the Environment

This document compiles more than 700 peer-reviewed publications about the environment and sustainability authored by Stanford faculty, students, postdoctoral scholars, and research staff in 2022.

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Above: Researchers from the Natural Capital Project found that the intersection of wildlife and built infrastructure creates tourism hotspots that can fuel green development. Here, a Great Kiskadee (*Pitangus sulphuratus*) sits on a tree branch in Corcovado National Park, Costa Rica. IMAGE CREDIT: DANIEL S. KARP

On the cover: A study published by researchers at the Stanford Center for Ocean Solutions found that rural communities in seven Pacific Island nations successfully weathered the initial impacts of COVID-19 by maintaining traditional food practices. IMAGE CREDIT: GEORGE STOYLE

Publications

CLIMATE

IMAGE CREDIT: JAYMANTRI

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Aeppli, M., Babey, T., Engel, M., Lacroix, E., Tolar, B., Fendorf, S., Bargar, J., & Boye, K. (2022). Export of Organic Carbon from Reduced Fine-Grained Zones Governs Biogeochemical Reactivity in a Simulated Aquifer. *Environmental Science and Technology*, *56*(4), 2738-2746. DOI:10.1021/acs.est.1c04664

Akbari, P., Copeland, C., Tüchler, S., Ferris, A., Davidson, D., & Hanson, R. (2022). Investigation of Ammonia-Hydrogen Mixture as a Green Fuel for Jet Engines Using a Wave Reformer. *AIAA Science and Technology Forum and Exposition 2022*. DOI:10.2514/6.2022-2048

Altenburg, M., Culberg, R., & Schroeder, D. (2022). Empirical Characterization of Surface Crevasse Clutter in Multi-Frequency Airborne Ice-Penetrating Radar Data. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 1684-1687. DOI: 10.1109/IGARSS46834.2022.9883652

Anantharaj, V., Hatfield, S., Polichtchouk, I., Wedi, N., O'Neill, M., Papatheodore, T., & Dueben, P. (2022). An open science exploration of global 1-km simulations of the earth's atmosphere. *Proceedings – 2022 IEEE 18th International Conference on e-Science*, 427-428. DOI: 10.1109/ESCIENCE55777.2022.00071

Arefifard, S., Payne, J., & Rizzi, M. (2022). Guadalupian carbon isotope stratigraphy indicates extended interval of carbon cycle stability. *American Journal of Science*, *322*(9), 1019-1046. DOI: 10.2475/09.2022.01

Balcazar, C., & Kennard, A. (2022). Climate Change and Political (In)Stability. *SSRN Electronic Journal*. DOI: 10.2139/SSRN.4206967

Bell, C., Rutherford, J., Brandt, A., Sherwin, E., Vaughn, T., & Zimmerle, D. (2022). Single-blind determination of methane detection limits and quantification accuracy using aircraft-based LiDAR. *Elementa: Science of the Anthropocene*, *10*(1). DOI: 10.1525/ELEMENTA.2022.00080

Berlin Rubin, N., & Wong-Parodi, G. (2022). As California burns: the psychology of wildfire- and wildfire smoke-related migration intentions. *Population and Environment*, *44*, 15-45. DOI: 10.1007/S11111-022-00409-W

Bienert, N., Haynes, M., Schroeder, D., & Beauchamp, R. (2022). SFMCW Orthogonal Wave Beamforming Concept for Distributed Orbital Sounding. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 84-87. DOI: 10.1109/IGARSS46834.2022.9883236

Bienert, N., Schroeder, D., & Summers, P. (2022). Bistatic Radar Tomography of Shear Margins: Simulated Temperature and Basal Material Inversions. *IEEE Transactions on Geoscience and Remote Sensing*. DOI: 10.1109/TGRS.2022.3213047

Bienert, N., Schroeder, D., Peters, S., MacKie, E., Dawson, E., Siegfried, M., Sanda, R., & Christoffersen, P. (2022). Post-Processing Synchronized Bistatic Radar for Long Offset Glacier Sounding. *IEEE Transactions on Geoscience and Remote Sensing*. DOI: 10.1109/TGRS.2022.3147172

Biggerstaff, A., Lepech, M., & Loftus, D. (2022). Determining the structuration of biopolymer-bound soil composite. *Materials and Structures*, *55*(7), 1-13. DOI: 10.1617/S11527-022-02004-9

Biggerstaff, A., Lepech, M., Fuller, G., & Loftus, D. (2022). A shape stability model for 3D printable biopolymer-bound soil composite. *Construction and Building Materials*, *321*, 126337. DOI: 10.1016/J.CONBUILDMAT.2022.126337

Broome, A., & Schroeder, D. (2022). A Radiometrically Precise Multi-Frequency Ice-Penetrating Radar Architecture. *IEEE Transactions on Geoscience and Remote Sensing*, *60*. DOI: 10.1109/TGRS.2021.3099801

Broome, A., Schroeder, D., & Johnson, J. (2022). Quantifying the Complimentary Sensitivities of Active and Passive Microwave Measurements to Ice-Sheet Thermal Signatures. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 8028-8031. DOI: 10.1109/IGARSS46834.2022.9883688

Bukvic, A., Mandli, K., Finn, D., Mayo, T., Wong-Parodi, G., Merdjanoff, A., Alland, J., Davis, C., Haacker, R., Morss, R., O'Lenick, C., Wilhelmi, O., & Lombardozzi, D. (2022). Advancing Interdisciplinary and Convergent Science for Communities: Lessons Learned through the NCAR Early-Career Faculty Innovator Program. *Bulletin of the American Meteorological Society*, *103*(11), E2513-E2532. DOI: 10.1175/BAMS-D-21-0265.1

Burney, J., Persad, G., Proctor, J., Bendavid, E., Burke, M., & Heft-Neal, S. (2022). Geographically resolved social cost of anthropogenic emissions accounting for both direct and climate-mediated effects. *Science Advances*, *8*(38), 7307. DOI: 10.1126/sciadv.abn7307

Cain, B., & Douzet, F. (2022). California on the front line against climate change: an immense political challenge. *Herodote*, *184185*(1), 11-21. DOI: 10.3917/HER.184.0011

Callas, C., Saltzer, S., Steve Davis, J., Hashemi, S., Kovscek, A., Okoroafor, E., Wen, G., Zoback, M., & Benson, S. (2022). Criteria and workflow for selecting depleted hydrocarbon reservoirs for carbon storage. *Applied Energy*, *324*, 119668. DOI: 10.1016/J.APENERGY.2022.119668

Childs, M., Li, J., Wen, J., Heft-Neal, S., Driscoll, A., Wang, S., Gould, C., Qiu, M., Burney, J., & Burke, M. (2022). Daily Local-Level Estimates of Ambient Wildfire Smoke PM2.5 for the Contiguous US. E*nvironmental Science & Technology*, *56*(19), 13607-13621. DOI: 10.1021/acs.est.2c02934

Chu, A., Benson, S., & Wen, G. (2022). Deep-Learning-Based Flow Prediction for CO2 Storage in Shale & Sandstone Formations. *Energies*, *16*(1), 246. DOI: 10.3390/EN16010246

Ciais, P., Bastos, A., Chevallier, F., Lauerwald, R., Poulter, B., Canadell, P., Hugelius, G., Jackson, R. B., Jain, A., Jones, M., Kondo, M., Luijkx, I. T., Patra, P. K., Peters, W., Pongratz, J., & Pet. (2022). Definitions and methods to estimate regional land carbon fluxes for the second phase of the REgional Carbon Cycle Assessment and Processes Project (RECCAP-2). *Geoscientific Model Development*, *15*(3), 1289-1316. DOI: 10.5194/GMD-15-1289-2022

Crain, D., Saltzer, S., Benson, S., & Durlofsky, L. (2022). An Integrated Framework for Optimal Monitoring and History Matching in CO2 Storage Projects. *ECMOR 2022*, (1), 1-15. DOI: 10.3997/2214-4609.202244104

Culberg, R., & Schroeder, D. (2022). Inverting for Firn Aquifer Properties from Ice-Penetrating Radar Data. *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2022-July, 1332-1335. DOI: 10.1109/IGARSS46834.2022.9884947

Culberg, R., Chu, W., & Schroeder, D. (2022). Shallow Fracture Buffers High Elevation Runoff in Northwest Greenland. *Geophysical Research Letters*, *49*(23), e2022GL101151. DOI: 10.1029/2022GL101151

Culha, C., Keller, T., & Suckale, J. (2022). Biased Witnesses: Crystal Thermal Records May Give Conflicting Accounts of Magma Cooling. *Journal of Geophysical Research: Solid Earth*, *127*(5), e2021JB023530. DOI: 10.1029/2021JB023530

Dadap, N., Cobb, A., Hoyt, A., Harvey, C., Feldman, A., Im, E., & Konings, A. (2022). Climate change-induced peatland drying in Southeast Asia. *Environmental Research Letters*, *17*(7), 074026. DOI: 10.1088/1748-9326/ac7969

Dawson, E., Schroeder, D., Chu, W., Mantelli, E., & Seroussi, H. (2022). Ice mass loss sensitivity to the Antarctic ice sheet basal thermal state. *Nature Communications*, *13*(1), 1-9. DOI: 10.1038/s41467-022-32632-2

Diffenbaugh, N. (2022). COVID-19 and the Environment: Short-Run and Potential Long-Run Impacts. *Annual Review of Environment and Resources*, *47*(1), 65-90. DOI: 10.1146/annurev-environ-120920-125207

Espinosa, Z., Sheshadri, A., Cain, G., Gerber, E., & DallaSanta, K. (2022). Machine Learning Gravity Wave Parameterization Generalizes to Capture the QBO and Response to Increased CO2. *Geophysical Research Letters*, *49*(8), e2022GL098174. DOI:10.1029/2022GL098174

Famiglietti, C., Worden, M., Quetin, G., Smallman, T., Dayal, U., Bloom, A., Williams, M., & Konings, A. (2022). Global net biome CO2 exchange predicted comparably well using parameter–environment relationships and plant functional types. *Global Change Biology*, *29*(8), 2256-2273. DOI: 10.1111/gcb.16574

Fan, L., Peng, Y., Jin, W., Cui, Y., & Fan, S. (2022). Large-Scale Annual Modeling of Low-Emissivity Films for Energy-Saving Buildings. *Conference on Lasers and Electro-Optics*. DOI: 10.1364/CLEO_AT.2022.JW3A.12

Finn, D., Mandli, K., Bukvic, A., Davis, C., Haacker, R., Morss, R., O'Lenick, C., Wilhelmi, O., Wong-Parodi, G., Merdjanoff, A., & Mayo, T. (2022). Moving from interdisciplinary to convergent research across geoscience and social sciences: challenges and strategies. *Environmental Research Letters*, *17*(6), 061002. DOI: 10.1088/1748-9326/ac7409

Fox, P. M., Carrero, S., Anderson, C., Dewey, C., Keiluweit, M., Conrad, M., Naughton, H. R., Fendorf, S., Carroll, R., Dafflon, B., Malenda-Lawrence, H., Dwivedi, D., Gilbert, B., & Christensen, J. (2022). Sulfur Biogeochemical Cycling and Redox Dynamics in a Shale-Dominated Mountainous Watershed. *Journal of Geophysical Research: Biogeosciences*, *127*(6). DOI: 10.1029/2021JG006769

Friedlingstein, P., Jones, M. W., O'Sullivan, M., Andrew, R. M., Bakker, D. C., Hauck, J., Le Quéré, C., Peters, G. P., Peters, W., Pongratz, J., Sitch, S., Canadell, J. G., Ciais, P., & Jackson, R. (2022). *Global Carbon Budget 2021. Earth System Science Data*, *14*(4), 1917-2005. DOI: 10.5194/ESSD-14-1917-2022

Friedlingstein, P., O'sullivan, M., Jones, M. W., Andrew, R. M., Gregor, L., Hauck, J., Le Quéré, C., Luijkx, I. T., Olsen, A., Peters, G. P., Peters, W., Pongratz, J., Schwingshackl, C., Sitch, S., & Can. (2022). Global Carbon Budget 2022. *Earth System Science Data*, *14*(11), 4811-4900. DOI: 10.5194/ESSD-14-4811-2022

Gadgil, A., Tomich, T., Agrawal, A., Allouche, J., Azevedo, I., Bakarr, M., Jannuzzi, G., Liverman, D., Malhi, Y., Polasky, S., Roy, J., Ürge-Vorsatz, D., & Wang, Y. (2022). The Great Intergenerational Robbery: A Call for Concerted Action Against Environmental Crises. *Annual Review of Environment and Resources*, *47*, 1-4. DOI: 10.1146/annurev-environ-061322-013248

Garfin, D., Thompson, R., & Wong-Parodi, G. (2022). Media exposure, threat processing, and mitigation behaviors in Gulf Coast residents facing the co-occurring threats of COVID-19 and hurricanes. *Risk Analysis*. DOI: 10.1111/risa.14032

Georgiou, K., Jackson, R., Vindušková, O., Abramoff, R., Ahlström, A., Feng, W., Harden, J., Pellegrini, A., Polley, H., Soong, J., Riley, W., & Torn, M. (2022). Global stocks and capacity of mineral-associated soil organic carbon. *Nature Communications*, *13*(1), 1-12. DOI: 10.1038/s41467-022-31540-9

Gonzales, K., Swain, D., Roop, H., & Diffenbaugh, N. (2022). Quantifying the Relationship Between Atmospheric River Origin Conditions and Landfall Temperature. *Journal of Geophysical Research: Atmospheres*, *127*(20), e2022JD037284. DOI: 10.1029/2022JD037284

Goulder, L., Long, X., Lu, J., & Morgenstern, R. (2022). China's unconventional nationwide CO2 emissions trading system: Cost-effectiveness and distributional impacts. *Journal of Environmental Economics and Management*, *111*, 102561. DOI: 10.1016/J.JEEM.2021.102561

Hager, A., Hoffman, M., Price, S., & Schroeder, D. (2022). Persistent, extensive channelized drainage modeled beneath Thwaites Glacier, West Antarctica. *Cryosphere*, *16*(9), 3575-3599. DOI: 10.5194/TC-16-3575-2022

Harrison, A., Schott, J., Oelkers, E., Maher, K., & Mavromatis, V. (2022). Rates of carbon and oxygen isotope exchange between calcite and fluid at chemical equilibrium. *Geochimica et Cosmochimica Acta*, *335*, 369-382. DOI: 10.1016/J.GCA.2022.06.041

Haugen, N., Loong, B., & Mitchell, R. (2022). Numerical approaches for thermochemical conversion of char. *Progress in Energy and Combustion Science*, *91*, 100993. DOI: 10.1016/J.PECS.2022.100993

Head, M. J., Steffen, W., Fagerlind, D., Waters, C. N., Poirier, C., Syvitski, J., Zalasiewicz, J. A., Barnosky, A. D., Cearreta, A., Jeandel, C., Leinfelder, R., McNeill, J., Rose, N. L., & Summerhayes, C. (2022). The Great Acceleration is real and provides a quantitative basis for the proposed Anthropocene Series/Epoch. *Episodes Journal of International Geoscience*, *45*(4), 359-376. DOI: 10.18814/EPIIUGS/2021/021031

Head, M. J., Zalasiewicz, J. A., Waters, C. N., Turner, S. D., Williams, M., Barnosky, A. D., Steffen, W., Wagreich, M., Haff, P. K., Syvitski, J., Leinfelder, R., McCarthy, F. M., Rose, N. L., & Wing, S. L. (2022). The Anthropocene is a prospective epoch/series, not a geological event. *Episodes Journal of International Geoscience*. DOI: 10.18814/epiiugs/2022/022025

Head, M. J., Zalasiewicz, J. A., Waters, C. N., Turner, S. D., Williams, M., Barnosky, A. D., Steffen, W., Wagreich, M., Haff, P. K., Syvitski, J., Leinfelder, R., Mccarthy, F. M., Rose, N. L., & Wing, S. L. (2022). The proposed Anthropocene Epoch/Series is underpinned by an extensive array of mid-20th century stratigraphic event signals. *Journal of Quaternary Science*, *37*(7), 1181-1187. DOI: 10.1002/jqs.3467

Hinckley, E., & Fendorf, S. (2022). Field science in the age of online learning: Dynamic instruction of techniques to assess soil physical properties. *Frontiers in Education*, *7*, 598. DOI: 10.3389/FEDUC.2022.959776/BIBTEX

Hodgskiss, M., & Sperling, E. (2022). A prolonged, two-step oxygenation of Earth's early atmosphere: Support from confidence intervals. *Geology*, *50*(2), 158-162. DOI: 10.1130/G49385.1

Hong, C., Zhao, H., Qin, Y., Burney, J., Pongratz, J., Hartung, K., Liu, Y., Moore, F., Jackson, R., Zhang, Q., & Davis, S. (2022). Land-use emissions embodied in international trade. *Science*, *376*(6593). DOI: 10.1126/science.abj1572

Huang, S., & Zebker, H. (2022). InSAR Time-Series Analysis With a Non-Gaussian Detector for Persistent Scatterers. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, *15*, 9208-9225. DOI: 10.1109/JSTARS.2022.3216964

Hui, I., Zhao, A., Cain, B., & Driscoll, A. (2022). Baptism by Wildfire? Wildfire Experiences and Public Support for Wildfire Adaptation Policies. *American Politics Research*, *50*(1), 108-116. DOI: 10.1177/1532673X211023926

Jackson, R., Friedlingstein, P., Le Quéré, C., Abernethy, S., Andrew, R., Canadell, J., Ciais, P., Davis, S., Deng, Z., Liu, Z., Korsbakken, J., & Peters, G. (2022). Global fossil carbon emissions rebound near pre-COVID-19 levels. *Environmental Research Letters*, *17*(3), 031001. DOI: 10.1088/1748-9326/ac55b6

Jakovljevic, M., Michaelides, R., Biondi, E., Hyun, D., Zebker, H., & Dahl, J. (2022). Adaptation of Range-Doppler Algorithm for Efficient Beamforming of Monostatic and Multistatic Ultrasound Signals. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, *69*(11), 3165-3178. DOI: 10.1109/TUFFC.2022.3205923

Jian, J., Bailey, V., Dorheim, K., Konings, A., Hao, D., Shiklomanov, A., Snyder, A., Steele, M., Teramoto, M., Vargas, R., & Bond-Lamberty, B. (2022). Historically inconsistent productivity and respiration fluxes in the global terrestrial carbon cycle. *Nature Communications*, *13*(1), 1-9. DOI: 10.1038/s41467-022-29391-5

Jordan, T., Martín, C., Brisbourne, A., Schroeder, D., & Smith, A. (2022). Radar Characterization of Ice Crystal Orientation Fabric and Anisotropic Viscosity Within an Antarctic Ice Stream. *Journal of Geophysical Research: Earth Surface*, *127*(6), e2022JF006673. DOI: 10.1029/2022JF006673

Kannenberg, S., Guo, J., Novick, K., Anderegg, W., Feng, X., Kennedy, D., Konings, A., Martínez-Vilalta, J., & Matheny, A. (2022). Opportunities, challenges and pitfalls in characterizing plant water-use strategies. *Functional Ecology*, *36*(1), 24-37. DOI: 10.1111/1365-2435.13945

Kapai, S., Schroeder, D., Broome, A., Young, T., & Stewart, C. (2022). SAR Focusing of Mobile Apres Surveys. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 1688-1691. DOI: 10.1109/IGARSS46834.2022.9883784

Keller, T., Tornos, F., Hanchar, J., Pietruszka, D., Soldati, A., Dingwell, D., & Suckale, J. (2022). Genetic model of the El Laco magnetite-apatite deposits by extrusion of iron-rich melt. *Nature Communications*, *13*(1), 1-14.DOI: 10.1038/s41467-022-33302-z

Keys, P., Barnes, E., Diffenbaugh, N., Hurrell, J., & Bell, C. (2022). Potential for perceived failure of stratospheric aerosol injection deployment. *Proceedings of the National Academy of Sciences*, *119*(40), e2210036119. DOI: 10.1073/pnas.2210036119

Kim, H., Kashir, A., Jang, H., Abernethy, S., & Jackson, R. (2022). Global temperature goals should determine the time horizons for greenhouse gas emission metrics. *Environmental Research Letters*, *17*(2), 024019. DOI: 10.1088/1748-9326/ac4940

Kizer, K., & Nadeau, K. (2022). Confronting Health Care's Climate Crisis Conundrum: The Federal Government as Catalyst for Change. *JAMA*, *327*(8), 715-716. DOI: 10.1001/JAMA.2022.0259

Kukla, T., Rugenstein, J., Driscoll, E., Ibarra, D., & Chamberlain, C. (2022). The PATCH Lab v1.0: A database and workspace for Cenozoic terrestrial paleoclimate and environment reconstruction. *American Journal of Science*, *322*(10), 1124-1158. DOI: 10.2475/10.2022.02

Kukla, T., Rugenstein, J., Ibarra, D., Winnick, M., Strömberg, C., & Chamberlain, C. (2022). Drier Winters Drove Cenozoic Open Habitat Expansion in North America. *AGU Advances*, *3*(2), e2021AV000566. DOI: 10.1029/2021AV000566

Kumar, N., Noël, V., Besold, J., Planer-Friedrich, B., Boye, K., Fendorf, S., & Gordon E. Brown, J. (2022). Mechanism of Arsenic Partitioning During Sulfidation of As-Sorbed Ferrihydrite Nanoparticles. *ACS Earth and Space Chemistry*, *6*(7), 1666-1673. DOI: 10.1021/acsearthspacechem.1c00373

Lacroix, E., Masue-Slowey, Y., Dlott, G., Keiluweit, M., Chadwick, O., & Fendorf, S. (2022). Mineral Protection and Resource Limitations Combine to Explain Profile-Scale Soil Carbon Persistence. Journal of Geophysical Research: *Biogeosciences*, *127*(4). DOI: 10.1029/2021JG006674

Lacroix, E., Mendillo, J., Gomes, A., Dekas, A., & Fendorf, S. (2022). Contributions of anoxic microsites to soil carbon protection across soil textures. *Geoderma*, *425*, 116050. DOI: 10.1016/J.GEODERMA.2022.116050

Lebel, E., Finnegan, C., Ouyang, Z., & Jackson, R. (2022). Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes. *Environmental Science and Technology*, *56*(4), 2529-2539. DOI: 10.1021/acs.est.1c04707

Li, X., Lehrmann, D., Luczaj, J., Kelley, B., Cantrell, D., Yu, M., Ferrill, N., & Payne, J. (2022). Unraveling overprinted formation mechanisms of massive dolostone in the Lower Triassic sequence of an isolated carbonate platform in Nanpanjiang Basin, south China. *Sedimentary Geology*, *440*, 106240. DOI: 10.1016/J.SEDGEO.2022.106240

Liu, Y., Flournoy, O., Zhang, Q., Novick, K., Koster, R., & Konings, A. (2022). Canopy Height and Climate Dryness Parsimoniously Explain Spatial Variation of Unstressed Stomatal Conductance. *Geophysical Research Letters*, *49*(15), e2022GL099339. DOI: 10.1029/2022GL099339

Liu, Z., Deng, Z., Zhu, B., Ciais, P., Davis, S. J., Tan, J., Andrew, R. M., Boucher, O., Arous, S. B., Canadell, J. G., Dou, X., Friedlingstein, P., Gentine, P., Guo, R., Hong, C., & Jackson, R. (2022). Global patterns of daily CO2 emissions reductions in the first year of COVID-19. *Nature Geoscience*, *15*(8), 615-620. DOI: 10.1038/s41561-022-00965-8

Lu, Y., Sloan, B., Thompson, S., Konings, A., Bohrer, G., Matheny, A., & Feng, X. (2022). Intra-Specific Variability in Plant Hydraulic Parameters Inferred From Model Inversion of Sap Flux Data. Journal of Geophysical Research: *Biogeosciences*, *127*(6), e2021JG006777. DOI: 10.1029/2021JG006777

Luers, A., Yona, L., Field, C. B., Jackson, R. B., Mach, K. J., Cashore, B. W., Elliott, C., Gifford, L., Honigsberg, C., Klaassen, L., Matthews, H. D., Peng, A., Stoll, C., Van Pelt, M., & Virgi. (2022). Make greenhouse-gas accounting reliable — build interoperable systems. *Nature*, *607*(7920), 653-656. DOI: 10.1038/d41586-022-02033-y

Ma, X., Wang, T., Shi, Z., Chiariello, N. R., Docherty, K., Field, C. B., Gutknecht, J., Gao, Q., Gu, Y., Guo, X., Hungate, B. A., Lei, J., Niboyet, A., Le Roux, X., Yuan, M., Yuan, T., & Zhou, J. (2022). Long-term nitrogen deposition enhances microbial capacities in soil carbon stabilization but reduces network complexity. *Microbiome*, *10*(1), 112. DOI: 10.1186/S40168-022-01309-9

Maher, K., Winnich, M. J., & Druhan, J. L. (2022). Weathering intensity and lithium isotopes: A reactive transport perspective. *American Journal of Science*, *322*(5), 647-682. DOI: 10.2475/05.2022.01

Mansfield, L., & Sheshadri, A. (2022). Calibration and Uncertainty Quantification of a Gravity Wave Parameterization: A Case Study of the Quasi-Biennial Oscillation in an Intermediate Complexity Climate Model. *Journal of Advances in Modeling Earth Systems*, *14*(11), e2022MS003245. DOI: 10.1029/2022MS003245

Maximillian Roberts, T., Romero-Wolf, A., Bruzzone, L., Carrer, L., Peters, S., & Schroeder, D. (2022). Conditioning Jovian Burst Signals for Passive Sounding Applications. *IEEE Transactions on Geoscience and Remote Sensing*, *60*. DOI: 10.1109/TGRS.2021.3109106

McLeod, A., Peters, S., Culberg, R., Schroeder, D., Bienert, N., Chu, W., Young, T., & Christoffersen, P. (2022). Processing and Detecting Artifacts in Multi-Input Multi-Output Phase-Sensitive ICE Penetrating Radar Data. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 3786-3789. DOI: 10.1109/IGARSS46834.2022.9883837

Meng, C., Liu, E., Neiswanger, W., Song, J., Burke, M., Lobell, D., & Ermon, S. (2022). IS-Count: Large-Scale Object Counting from Satellite Images with Covariate-Based Importance Sampling. *Proceedings of the AAAI Conference on Artificial Intelligence*, *36*(11), 12034-12042. DOI: 10.1609/AAAI.V36I11.21462

Miller, J., Culberg, R., Long, D., Shuman, C., Schroeder, D., & Brodzik, M. (2022). An empirical algorithm to map perennial firn aquifers and ice slabs within the Greenland Ice Sheet using satellite L-band microwave radiometry. *Cryosphere*, *16*(1), 103-125. DOI: 10.5194/TC-16-103-2022

Mills, D., Boyle, R., Daines, S., Sperling, E., Pisani, D., Donoghue, P., & Lenton, T. (2022). Eukaryogenesis and oxygen in Earth history. *Nature Ecology & Evolution*, *6*(5), 520-532. DOI: 10.1038/s41559-022-01733-y

Nadeau, K., Agache, I., Jutel, M., Annesi Maesano, I., Akdis, M., Sampath, V., D'Amato, G., Cecchi, L., Traidl-Hoffmann, C., & Akdis, C. (2022). Climate change: A call to action for the United Nations. *Allergy*, *77*(4), 1087-1090. DOI: 10.1111/all.15079

Novick, K., Ficklin, D., Baldocchi, D., Davis, K., Ghezzehei, T., Konings, A., MacBean, N., Raoult, N., Scott, R., Shi, Y., Sulman, B., & Wood, J. (2022). Confronting the water potential information gap. *Nature Geoscience*, *15*(3), 158-164. DOI: 10.1038/s41561-022-00909-2

Okoroafor, E., Williams, M., Gossuin, J., Keshinro, O., & Horne, R. (2022). Fracture roughness considerations in comparing CO2 and water as enhanced geothermal system working fluids. *Geothermics*, *106*, 102578. DOI: 10.1016/J.GEOTHERMICS.2022.102578

Pan, Y., Jackson, R., Hollinger, D., Phillips, O., Nowak, R., Norby, R., Oren, R., Reich, P., Lüscher, A., Mueller, K., Owensby, C., Birdsey, R., Hom, J., & Luo, Y. (2022). Contrasting responses of woody and grassland ecosystems to increased CO2 as water supply varies. *Nature Ecology and Evolution*, *6*(3), 315-323. DOI: 10.1038/S41559-021-01642-6

Pellitier, P., & Jackson, R. (2022). Microbes modify soil nutrient availability and mediate plant responses to elevated CO2. *Plant and Soil*, *483*, 659-666. DOI: 10.1007/s11104-022-05807-5

Peng, S., Picchi, D., & Suckale, J. (2022). Disrupt the upper or the lower conduit? The dual role of gas exsolution in the conduits of persistently active volcanoes. *Journal of Fluid Mechanics*, *942*, A24. DOI: 10.1017/JFM.2022.346

Pepin, K., Ellsworth, W., Sheng, Y., & Zebker, H. (2022). Shallow Aseismic Slip in the Delaware Basin Determined by Sentinel-1 InSAR. *Journal of Geophysical Research: Solid Earth*, *127*(2), e2021JB023157. DOI: 10.1029/2021JB023157

Perera, F., & Nadeau, K. (2022). Climate Change, Fossil-Fuel Pollution, and Children's Health. *New England Journal of Medicine*, *386*(24), 2303-2314. DOI: 10.1056/NEJMra2117706

Peshin, T., Sengupta, S., & Azevedo, I. (2022). Should India Move toward Vehicle Electrification? Assessing Life-Cycle Greenhouse Gas and Criteria Air Pollutant Emissions of Alternative and Conventional Fuel Vehicles in India. *Environmental Science and Technology*, *56*(13), 9569-9582. DOI: 10.1021/acs.est.1c07718

Peters, S., Roberts, T., Nessly, K., Schroeder, D., & Romero-Wolf, A. (2022). Revisiting the Limits of Spatial Coherence for Passive Radar Sounding Using Radio-Astronomical Sources. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July*, 3880-3883. DOI: 10.1109/IGARSS46834.2022.9884673

Pisor, A. C., Basurto, X., Douglass, K. G., Mach, K. J., Ready, E., Tylianakis, J. M., Hazel, A., Kline, M. A., Kramer, K. L., Lansing, J. S., Moritz, M., Smaldino, P. E., Thornton, T. F., & Jones, J. (2022). Effective climate change adaptation means supporting community autonomy. *Nature Climate Change*, *12*(3), 213-215. DOI: 10.1038/s41558-022-01303-x

Plant, G., Kort, E., Brandt, A., Chen, Y., Fordice, G., Negron, A., Schwietzke, S., Smith, M., & Zavala-Araiza, D. (2022). Inefficient and unlit natural gas flares both emit large quantities of methane. *Science*, *377*(6614), 1566-1571. DOI: 10.1126/science.abq0385

Poland, M., & Zebker, H. (2022). Volcano geodesy using InSAR in 2020: the past and next decades. *Bulletin of Volcanology*, *84*(3), 1-8. DOI: 10.1007/s00445-022-01531-1

Quetin, G., Anderegg, L., Konings, A., & Trugman, A. (2022). Quantifying the Global Power Needed for Sap Ascent in Plants. *Journal of Geophysical Research: Biogeosciences*, *127*(8), e2022JG006922. DOI: 10.1029/2022JG006922

Rao, K., Ulloa, Y., Bienert, N., Chiariello, N., Holtzman, N., Quetin, G., Peters, S., Winstein, K., Castelletti, D., Schroeder, D., & Konings, A. (2022). Side-Facing UHF-Band Radar System to Monitor Tree Water Status. *International Geoscience and Remote Sensing Symposium (IGARSS), 2022-July,* 5559-5562. DOI: 10.1109/IGARSS46834.2022.9883620

Rao, K., Williams, A., Diffenbaugh, N., Yebra, M., & Konings, A. (2022). Plant-water sensitivity regulates wildfire vulnerability. *Nature Ecology & Evolution*, *6*, 332-339. DOI: 10.1038/s41559-021-01654-2

Rojas, J., Sun, E., Wan, G., Oh, J., Randall, R., Haribal, V., Jung, I.-h., Gupta, R., & Majumdar, A. (2022). Iron-Poor Ferrites for Low-Temperature CO2 Conversion via Reverse Water–Gas Shift Thermochemical Looping. *ACS Sustainable Chemistry & Engineering*, *10*(37), 12252-12261. DOI: 10.1021/acssuschemeng.2c03196

Rugenstein, J., Methner, K., Kukla, T., Mulch, A., Lüdecke, T., Fiebig, J., Meltzer, A., WEGMANN, K., Zeitler, P., & Chamberlain, C. (2022). Clumped isotope constraints on warming and precipitation seasonality in Mongolia following Altai uplift. *American Journal of Science*, *322*(1), 28-54. DOI: 10.2475/01.2022.02

Schachat, S., Goldstein, P., Desalle, R., Bobo, D., Boyce, C., Payne, J., & Labandeira, C. (2022). Illusion of flight? Absence, evidence and the age of winged insects. *Biological Journal of the Linnean Society*, 1-26. DOI: 10.1093/biolinnean/blac137/6936511

Schroeder, D., Broome, A., Conger, A., Lynch, A., MacKie, E., & Tarzona, A. (2022). Radiometric analysis of digitized Z-scope records in archival radar sounding film. *Journal of Glaciology*, *68*(270), 733-740. DOI: 10.1017/JOG.2021.130

Sengupta, S., Adams, P., Deetjen, T., Kamboj, P., D'Souza, S., Tongia, R., & Azevedo, I. (2022). Subnational implications from climate and air pollution policies in India's electricity sector. *Science*, *378*(6620). DOI: 10.1126/science.abh1484

Sengupta, S., Spencer, T., Rodrigues, N., Pachouri, R., Thakare, S., Adams, P., Tongia, R., & Azevedo, M. (2022). Current and Future Estimates of Marginal Emission Factors for Indian Power Generation. *Environ. Sci. Technol*, 9250. DOI: 10.1021/acs.est.1c07500

Shao, Q., Boon, M., Youssef, A., Kurtev, K., Benson, S., & Matthai, S. (2022). Modelling CO2 plume spreading in highly heterogeneous rocks with anisotropic, rate-dependent saturation functions: A field-data based numeric simulation study of Otway. *International Journal of Greenhouse Gas Control*, *119*, 103699. DOI: 10.1016/J.IJGGC.2022.103699

Shin, C., Szczuka, A., Liu, M., Mendoza, L., Jiang, R., Tilmans, S., Tarpeh, W., Mitch, W., & Criddle, C. (2022). Recovery of Clean Water and Ammonia from Domestic Wastewater: Impacts on Embodied Energy and Greenhouse Gas Emissions. *Environmental Science and Technology*, *56*(12), 8712-8721. DOI: 10.1021/acs.est.1c07992

Singh, M., & O'neill, M. (2022). The climate system and the second law of thermodynamics. *Reviews of Modern Physics*, *94*(1), 015001. DOI: 10.1103/REVMODPHYS.94.015001/FIGURES/14/MEDIUM

Singh, M., O'Neill, M., Singh, M., & O'Neill, M. (2022). Thermodynamics of the climate system. *PhT*, *75*(7), 30-37. DOI: 10.1063/PT.3.5038

Sperling, E., Boag, T., Duncan, M., Endriga, C., Andres Marquez, J., Mills, D., Monarrez, P., Sclafani, J., Stockey, R., & Payne, J. (2022). Breathless through Time: Oxygen and Animals across Earth's History. *The Biological Bulletin*, *243*(2). DOI: 10.1086/721754

Spinks, S., Sperling, E., Thorne, R., LaFountain, F., White, A., Armstrong, J., Woltering, M., & Tyler, I. (2022). Mesoproterozoic surface oxygenation accompanied major sedimentary manganese deposition at 1.4 and 1.1 Ga. *Geobiology*, *21*(1), 28-43. DOI: 10.1111/gbi.12524

Stavert, A. R., Saunois, M., Canadell, J. G., Poulter, B., Jackson, R. B., Regnier, P., Lauerwald, R., Raymond, P. A., Allen, G. H., Patra, P. K., Bergamaschi, P., Bousquet, P., Chandra, N., & Ciais, P. (2022). Regional trends and drivers of the global methane budget. *Global Change Biology*, *28*(1), 182-200. DOI: 10.1111/gcb.15901

Tang, M., Ju, X., & Durlofsky, L. (2022). Deep-learning-based coupled flow-geomechanics surrogate model for CO2 sequestration. *International Journal of Greenhouse Gas Control*, *118*, 103692. DOI: 10.1016/J.IJGGC.2022.103692

Tarpeh, W. (2022). Electrifying climate change mitigation. *Nature Energy*, *7*(11), 1009-1010. DOI: 10.1038/s41560-022-01146-y

Teisberg, T., Schroeder, D., Broome, A., Lurie, F., & Woo, D. (2022). Development of a Uav-Borne Pulsed ICE-Penetrating Radar System. *International Geoscience and Remote Sensing Symposium (IGARSS)*, *2022-July*, 7405-7408. DOI: 10.1109/IGARSS46834.2022.9883583

Thurber, M., Passow, F., Davis, T., & Wolak, F. (2022). Game-based investigation of standardized forward contracting for long-term resource adequacy. *The Electricity Journal*, *35*(7), 107156. DOI: 10.1016/J.TEJ.2022.107156

Tiedje, J., Bruns, M., Casadevall, A., Criddle, C., Eloe-Fadrosh, E., Karl, D., Nguyen, N., & Zhou, J. (2022). Microbes and Climate Change: a Research Prospectus for the Future. *mBio*, *13*(3). DOI: 10.1128/mbio.00800-22

Treves, R., Liu, E., Fischer, S., Rodriguez, E., & Wong-Parodi, G. (2022). Wildfire Smoke Clean Air Centers: Identifying Barriers and Opportunities for Improvement from California Practitioner and Community Perspectives. *Society & Natural Resources,* 1-20. DOI: 10.1080/08941920.2022.2113487

Tumber-Dávila, S., Schenk, H., Du, E., & Jackson, R. (2022). Plant sizes and shapes above and belowground and their interactions with climate. *New Phytologist*, *235*(3), 1032-1056. DOI: 10.1111/nph.18031

Velterop, E., Uzkent, B., & Suckale, J. (2022). Safe Shelter: A Case for Prioritizing Housing Quality in Climate Adaptation Policy by Remotely Sensing Roof Tarps in the San Francisco Bay Area. *Earth's Future*, *10*(8), e2022EF002789. DOI: 10.1029/2022EF002789

Vereecken, H., Amelung, W., Bauke, S. L., Bogena, H., Brüggemann, N., Montzka, C., Vanderborght, J., Bechtold, M., Blöschl, G., Carminati, A., Javaux, M., Konings, A. G., Kusche, J., Neuweiler, I., & Or, D. (2022). Soil hydrology in the Earth system. *Nature Reviews Earth & Environment*, *3*(9), 573-587. DOI: 10.1038/s43017-022-00324-6

Wan, X., Holyoak, M., Yan, C., Maho, Y., Dirzo, R., Krebs, C., Stenseth, N., & Zhang, Z. (2022). Broad-scale climate variation drives the dynamics of animal populations: a global multi-taxa analysis. *Biological Reviews*, *97*(6), 2174-2194. DOI: 10.1111/brv.12888

Wang, C., Miller, J., Jackson, R., & Carstensen, L. (2022). Combating Climate Change in an Era of Longevity. *Generations Journal*. https://generations.asaging.org/combating-climate-change-era-longevity

Wang, J., Ji, J., Ravikumar, A., Savarese, S., & Brandt, A. (2022). VideoGasNet: Deep learning for natural gas methane leak classification using an infrared camera. *Energy*, *238*, 121516. DOI: 10.1016/J.ENERGY.2021.121516

Waters, C. N., Williams, M., Zalasiewicz, J., Turner, S. D., Barnosky, A. D., Head, M. J., Wing, S. L., Wagreich, M., Steffen, W., Summerhayes, C. P., Cundy, A. B., Zinke, J., Fiałkiewicz-Kozieł, B., & Leinfelder, R. (2022). Epochs, events and episodes: Marking the geological impact of humans. *Earth-Science Reviews*, *234*, 104171. DOI: 10.1016/J.EARSCIREV.2022.104171

Wei, Z., Qin, Z., & Suckale, J. (2022). Magma Mixing During Conduit Flow is Reflected in Melt-Inclusion Data From Persistently Degassing Volcanoes. *Journal of Geophysical Research: Solid Earth*, *127*(2), e2021JB022799. DOI: 10.1029/2021JB022799

Wen, J., & Burke, M. (2022). Lower test scores from wildfire smoke exposure. *Nature Sustainability*, *5*, 947-955. DOI: 10.1038/s41893-022-00956-y

Wen, K., Chadwick, O., Vitousek, P., Paulus, E., Landrot, G., Tappero, R., Kaszuba, J., Luther, G., Wang, Z., Reinhart, B., & Zhu, M. (2022). Manganese Oxidation States in Volcanic Soils across Annual Rainfall Gradients. *Environmental Science and Technology*, *57*(1), 730-740. DOI: 10.1021/acs.est.2c02658

Wig, E., Michaelides, R., & Zebker, H. (2022). High-Resolution Measurement of Soil Moisture from Insar Phase Closure. *International Geoscience and Remote Sensing Symposium (IGARSS)*, *2022-July*, 919-922. DOI: 10.1109/IGARSS46834.2022.9884835

Wong-Parodi, G. (2022). Community-engaged research is stronger and more impactful. *Nature Human Behaviour*, *6*, 1601-1602. DOI: 10.1038/s41562-022-01494-5

Wong-Parodi, G. (2022). Support for public safety power shutoffs in California: Wildfire-related perceived exposure and negative outcomes, prior and current health, risk appraisal and worry. E*nergy Research & Social Science*, *88*, 102495. DOI: 10.1016/J.ERSS.2022.102495

Wong-Parodi, G., & Berlin Rubin, N. (2022). Exploring how climate change subjective attribution, personal experience with extremes, concern, and subjective knowledge relate to pro-environmental attitudes and behavioral intentions in the United States. *Journal of Environmental Psychology*, *79*, 101728. DOI: 10.1016/J.JENVP.2021.101728

Wong-Parodi, G., & Garfin, D. (2022). Hurricane adaptation behaviors in Texas and Florida: exploring the roles of negative personal experience and subjective attribution to climate change. *Environmental Research Letters*, *17*(3), 034033. DOI: 10.1088/1748-9326/ac4858

Wong-Parodi, G., & Garfin, D. (2022). Priming close social contact protective behaviors enhances protective social norms perceptions, protection views, and self-protective behaviors during disasters. *International Journal of Disaster Risk Reduction*, *80*, 103135. DOI: 10.1016/J.IJDRR.2022.103135

Yin, Z., Zuo, C., MacKie, E., & Caers, J. (2022). Mapping high-resolution basal topography of West Antarctica from radar data using non-stationary multiple-point geostatistics (MPS-BedMappingV1). *Geoscientific Model Development*, *15*(4), 1477-1497. DOI: 10.5194/GMD-15-1477-2022

Yu, J., Hmiel, B., Lyon, D., Warren, J., Cusworth, D., Duren, R., Chen, Y., Murphy, E., & Brandt, A. (2022). Methane Emissions from Natural Gas Gathering Pipelines in the Permian Basin. *Environmental Science & Technology Letters*, *9*(11), 969-974. DOI: 10.1021/acs.estlett.2c00380

Yuan, K., Zhu, Q., Li, F., Riley, W. J., Torn, M., Chu, H., McNicol, G., Chen, M., Knox, S., Delwiche, K., Wu, H., Baldocchi, D., Ma, H., Desai, A. R., Chen, J., Sachs, T., Ueyama, M., & Sonnenta. (2022). Causality guided machine learning model on wetland CH4 emissions across global wetlands. *Agricultural and Forest Meteorology*, *324*, 109115. DOI: 10.1016/J.AGRFORMET.2022.109115

Zhang, L., Tian, H., Shi, H., Pan, S., Chang, J., Dangal, S., Qin, X., Wang, S., Tubiello, F., Canadell, J., & Jackson, R. (2022). A 130-year global inventory of methane emissions from livestock: Trends, patterns, and drivers. *Global Change Biology*, *28*(17), 5142-5158. DOI: 10.1111/gcb.16280

Zhang, Z., Poulter, B., Knox, S., Stavert, A., Mcnicol, G., Fluet-Chouinard, E., Feinberg, A., Zhao, Y., Bousquet, P., Canadell, J. G., Ganesan, A., Hugelius, G., Hurtt, G., Jackson, R. B., & Patra, P. (2022). Anthropogenic emission is the main contributor to the rise of atmospheric methane during 1993–2017. *National Science Review*, *9*(5). DOI: 10.1093/NSR/NWAB200

Zhang, Z., Sherwin, E., Varon, D., & Brandt, A. (2022). Detecting and quantifying methane emissions from oil and gas production: algorithm development with ground-truth calibration based on Sentinel-2 satellite imagery. *EGUsphere,* 1-23. DOI: 10.5194/egusphere-2022-771

Zhao, M., A, G., Liu, Y., & Konings, A. (2022). Evapotranspiration frequently increases during droughts. *Nature Climate Change*, *12*(11), 1024-1030. DOI: 10.5194/EGUSPHERE-2022-771

Zhou, C., Asundi, A., Goodman, E., Hong, J., Werghi, B., Hoffman, A., Nathan, S., Bent, S., Bare, S., & Cargnello, M. (2022). Steering CO2 hydrogenation toward C–C coupling to hydrocarbons using porous organic polymer/metal interfaces. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(7), e2114768119. DOI: 10.1073/pnas.2114768119

CONSERVATION

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Aeppli, M., Thompson, A., Dewey, C., & Fendorf, S. (2022). Redox Properties of Solid Phase Electron Acceptors Affect Anaerobic Microbial Respiration under Oxygen-Limited Conditions in Floodplain Soils. *Environmental Science & Technology*, *56*(23), 17462-17470. DOI: 10.1021/acs.est.2c05797

Agarwal, S., Sairorkham, B., Sakitram, P., & Lambin, E. (2022). Effectiveness of community forests for forest conservation in Nan province, Thailand. *Journal of Land Use Science*, *17*(1), 307-323. DOI: 10.1080/1747423X.2022.2078438

Akana, P., Bateman, J., & Vitousek, P. (2022). Water balance affects foliar and soil nutrients differently. *Oecologia 2022*, *1*, 1-13. DOI: 10.1007/s00442-022-05244-2

Anderson, A., Clark, G., Haberle, S., Larson, G., & Seetah, K. (2022). Editorial: Early Human Colonization of Remote Indian Ocean Islands and Its Ecological Impacts. *Frontiers in Ecology and Evolution*, *10*, 463. DOI: 10.3389/FEVO.2022.915306/BIBTEX

Armstrong, E., Campana, M., Solari, K., Morgan, S., Ryder, O., Naude, V., Samelius, G., Sharma, K., Hadly, E., & Petrov, D. (2022). Genome report: chromosome-level draft assemblies of the snow leopard, African leopard, and tiger (Panthera uncia, Panthera pardus pardus, and Panthera tigris). *G3 Genes|Genomes|Genetics*, *12*(12). DOI: 10.1093/G3JOURNAL/JKAC277

Bager, S., & Lambin, E. (2022). How do companies implement their zero-deforestation commitments. *Journal of Cleaner Production*, *375*, 134056. DOI: 10.1016/J.JCLEPRO.2022.134056

Becker, P., Sandin, S., Becker, C., Erazo, N., Fisher, R., Friedlander, A., Fukami, T., Graham, N., Gruner, D., Holmes, N., Holthuizen, W., Jones, H., Rios, M., Sechrest, W., Semmens, B., & Thornton, H. (2022). Island Ocean Connections: Exploring Land-Sea Linkages in the Context of Invasive Mammal Management. *UC San Diego: Center for Marine Biodiversity and Conservation*. escholarship.org/uc/item/05x9f5z6

Bogar, L., Tavasieff, O., Raab, T., & Peay, K. (2022). Does resource exchange in ectomycorrhizal symbiosis vary with competitive context and nitrogen addition? *New Phytologist*, *233*(3), 1331-1344. DOI: .1111/nph.17871

Burnett, M., Bobbett, A., Brendel, C., Marshall, K., von Sperber, C., Paulus, E., & Vitousek, P. (2022). Foliar δ15N patterns in legumes and non-N fixers across a climate gradient, Hawai'i Island, USA. *Oecologia*, *198*(1), 229-242. DOI: 10.1007/s00442-021-05089-1

Chappell, C. R., Dhami, M. K., Bitter, M. C., Czech, L., Paredes, S. H., Barrie, F. B., Calderón, Y., Eritano, K., Golden, L. A., Hekmat-Scafe, D., Hsu, V., Kieschnick, C., Malladi, S., & Rush. (2022). Wide-ranging consequences of priority effects governed by an overarching factor. *eLife*, *11*. DOI: 10.7554/ELIFE.79647

Chin, D., & Lentink, D. (2022). Birds both avoid and control collisions by harnessing visually guided force vectoring. *Journal of the Royal Society Interface*, *19*(191). DOI: 10.1098/rsif.2021.0947

Crist, E., Ripple, W., Ehrlich, P., Rees, W., & Wolf, C. (2022). Scientists' warning on population. *Science of the Total Environment*, *845*. DOI: 10.1016/J.SCITOTENV.2022.157166

Cui, H., Vitousek, P. M., Reed, S. C., Sun, W., Sokoya, B., Bamigboye, A. R., Verma, J. P., Mukherjee, A., Peñaloza-Bojacá, G. F., Teixido, A. L., Trivedi, P., He, J. Z., Hu, H. W., Png, K., & Delgado-B. (2022). Environmental filtering controls soil biodiversity in wet tropical ecosystems. *Soil Biology and Biochemistry*, *166*, 108571. DOI: 10.1016/J.SOILBIO.2022.108571

De Marzo, T., Gasparri, N., Lambin, E., & Kuemmerle, T. (2022). Agents of Forest Disturbance in the Argentine Dry Chaco. Remote Sensing 2022, Vol. 14, Page 1758, 14(7), 1758. DOI: 10.3390/RS14071758

de Oliveira, M., Saranholi, B., Dirzo, R., & Galetti, P. (2022). A review of philopatry and dispersal in felids living in an anthropised world. *Mammal Review*, *52*(2), 208-220. DOI: 10.1111/mam.12275

DeMalach, N., Ke, P., & Fukami, T. (2022). The effects of ecological selection on species diversity and trait distribution: predictions and an empirical test. *Ecology*, *103*(1), e03567. DOI: 10.1002/ecy.3567

Díaz, S., Kattge, J., Cornelissen, J. H., Wright, I. J., Lavorel, S., Dray, S., Reu, B., Kleyer, M., Wirth, C., Prentice, I. C., Garnier, E., Bönisch, G., Westoby, M., Poorter, H., & Reich, P. B. (2022). The global spectrum of plant form and function: enhanced species-level trait dataset. *Scientific Data*, *9*(1), 1-18. DOI: 10.1038/s41597-022-01774-9

Dirzo, R., Ceballos, G., & Ehrlich, P. (2022). Circling the drain: the extinction crisis and the future of humanity. *Philosophical Transactions of the Royal Society B*, *377*(1857). DOI: 10.1098/rstb.2021.0378

Enam, S., Cherry, J., Leonard, S., Zheludev, I., Lipman, D., & Fire, A. (2022). Restriction Endonuclease-Based Modification-Dependent Enrichment (REMoDE) of DNA for Metagenomic Sequencing. *Applied and Environmental Microbiology*, *89*(1). DOI: 10.1128/aem.01670-22

Genes, L., & Dirzo, R. (2022). Restoration of plant-animal interactions in terrestrial ecosystems. *Biological Conservation*, *265*, 109393. DOI: 10.1016/J.BIOCON.2021.109393

Genes, L., Losapio, G., Donatti, C., Guimarães, P., & Dirzo, R. (2022). Frugivore Population Biomass, but Not Density, Affect Seed Dispersal Interactions in a Hyper-Diverse Frugivory Network. *Frontiers in Ecology and Evolution*, *10*, 322. DOI: 10.3389/FEVO.2022.794723/BIBTEX

Gordon, D. (2022). The red harvester ant. *Nature Methods*, *19*(11), 1324-1325. DOI: 10.1038/S41592-022-01671-4

Green, K., Beaudreau, A., Lukin, M., & Ardoin, N. (2022). Pathways to subsistence management in Alaska national parks: Perspectives of harvesters and agency staff. *People and Nature*, *4*(6), 1664-1678. DOI: 10.1002/pan3.10414

Green, S., Brookson, C., Hardy, N., & Crowder, L. (2022). Trait-based approaches to global change ecology: moving from description to prediction. *Proceedings of the Royal Society B*, *289*(1971). DOI: 10.1098/rspb.2022.0071

Hall, R. N., Weill, U., Drees, L., Leal-Ortiz, S., Li, H., Khariton, M., Chai, C., Xue, Y., Rosental, B., Quake, S. R., Sánchez Alvarado, A., Melosh, N. A., Fire, A. Z., Rink, J. C., & Wang. (2022). Heterologous reporter expression in the planarian Schmidtea mediterranea through somatic mRNA transfection. *Cell Reports Methods*, *2*(10), 100298. DOI: 10.1016/J.CRMETH.2022.100298

Jetz, W., Tertitski, G., Kays, R., Mueller, U., Wikelski, M., Åkesson, S., Anisimov, Y., Antonov, A., Arnold, W., Bairlein, F., Baltà, O., Baum, D., Beck, M., Belonovich, O., Belyaev, M., & Berger, M. (2022). Biological Earth observation with animal sensors. *Trends in Ecology and Evolution*, *37*(4), 293-298. DOI: 10.1016/J.TREE.2021.11.011

Kabelik, D., Julien, A., Waddell, B., Batschelett, M., & O'Connell, L. (2022). Aggressive but not reproductive boldness in male green anole lizards correlates with baseline vasopressin activity. *Hormones and Behavior*, *140*, 105109. DOI: 10.1016/J.YHBEH.2022.105109

Krieger, A., Povilaitis, S., Gowda, P., O'Connell, L., & Eberlin, L. (2022). Noninvasive Detection of Chemical Defenses in Poison Frogs Using the MasSpec Pen. *ACS Measurement Science Au*, *2*(5), 475-484. DOI: 10.1021/acsmeasuresciau.2c00035

Kubiski, S., Witte, C., Burchell, J., Conradson, D., Zmuda, A., Barbon, A., Vilches-Moure, J., Felt, S., & Rideout, B. (2022). Mitochondrial Gene Diversity and Host Specificity of Isospora in Passerine Birds. *Frontiers in Veterinary Science*, *9*, 767. DOI: 10.3389/FVETS.2022.847030/BIBTEX

Lagerstrom, K., Vance, S., Cornwell, B., Ruffley, M., Bellagio, T., Exposito-Alonso, M., Palumbi, S., & Hadly, E. (2022). From coral reefs to Joshua trees: What ecological interactions teach us about the adaptive capacity of biodiversity in the Anthropocene. Philosophical transactions of the Royal Society of London. *Series B, Biological sciences*, *377*(1857). DOI: 10.1098/RSTB.2021.0389

Larue, T., Lindner, H., Srinivas, A., Exposito-Alonso, M., Lobet, G., & Dinneny, J. (2022, 9). Uncovering natural variation in root system architecture and growth dynamics using a robotics-assisted phenomics platform. *eLife*, *11*. DOI: 10.7554/ELIFE.76968

Macfarlane, N. B., Adams, J., Bennett, E. L., Brooks, T. M., Delborne, J. A., Eggermont, H., Endy, D., Esvelt, K. M., Kolodziejczyk, B., Kuiken, T., Oliva, M. J., Peña Moreno, S., Slobodian, L., & Sm. (2022). Direct and indirect impacts of synthetic biology on biodiversity conservation. *iScience*, *25*(11), 105423. DOI: 10.1016/J.ISCI.2022.105423

Mair, A., & Bergmann, D. (2022). Advances in enzyme-mediated proximity labeling and its potential for plant research. *Plant Physiology*, *188*(2), 756-768. DOI: 10.1093/PLPHYS/KIAB479

Martin, V., Schaeffer, R., & Fukami, T. (2022). Potential effects of nectar microbes on pollinator health. *Philosophical Transactions of the Royal Society B*, *377*(1853). DOI: 10.1098/rstb.2021.0155

Meyer, J., Honig, N., & Hadly, E. (2022). Diet DNA reveals novel African Forest elephant ecology on the grasslands of the Congo Basin. *Environmental DNA*, *4*(4), 846-867. DOI: 10.1002/edn3.296

Miller-ter Kuile, A., Apigo, A., Bui, A., DiFiore, B., Forbes, E. S., Lee, M., Orr, D., Preston, D. L., Behm, R., Bogar, T., Childress, J., Dirzo, R., Klope, M., Lafferty, K. D., & McLaughlin, J. (2022). Predator–prey interactions of terrestrial invertebrates are determined by predator body size and species identity. *Ecology*, *103*(5), e3634. DOI: 10.1002/ecy.3634

Munstermann, M., Heim, N., McCauley, D., Payne, J., Upham, N., Wang, S., & Knope, M. (2022). A global ecological signal of extinction risk in terrestrial vertebrates. *Conservation Biology*, *36*(3), e13852. DOI: 10.1111/cobi.13852

Mychajliw, A., Almonte, J., Martinez, P., & Hadly, E. (2022). Stable isotopes reveal seasonal dietary responses to agroforestry in a venomous mammal, the Hispaniolan solenodon (Solenodon paradoxus). *Ecology and Evolution*, *12*(3), e8761. DOI: 10.1002/ece3.8761

Nir, I., Amador, G., Gong, Y., Smoot, N., Cai, L., Shohat, H., & Bergmann, D. (2022). Evolution of polarity protein BASL and the capacity for stomatal lineage asymmetric divisions. *Current Biology*, *32*(2), 329-337.e5. DOI: 10.1016/J.CUB.2021.11.013

Nova, N., Pagliara, R., & Gordon, D. (2022). Individual Variation Does Not Regulate Foraging Response to Humidity in Harvester Ant Colonies. *Frontiers in Ecology and Evolution*, *9*. DOI: 10.3389/FEVO.2021.756204

Oestreich, W., Aiu, K., Crowder, L., McKenna, M., Berdahl, A., & Abrahms, B. (2022). The influence of social cues on timing of animal migrations. *Nature Ecology & Evolution*, *6*(11), 1617-1625. DOI: 10.1038/s41559-022-01866-0

O'Coin, D., McIvor, G., Thornton, A., Ouellette, N., & Ling, H. (2022). Velocity correlations in jackdaw flocks in different ecological contexts. *Physical Biology*, *20*(1), 016005. DOI: 10.1088/1478-3975/aca862

Ouellette, N. (2022). A physics perspective on collective animal behavior. *Physical Biology*, *19*(2), 021004. DOI: 10.1088/1478-3975/ac4bef

Pašukonis, A., Serrano-Rojas, S. J., Fischer, M.-T., Loretto, M.-C., Shaykevich, D. A., Rojas, B., Ringler, M., Roland, A. B., Marcillo-Lara, A., Ringler, E., Rodríguez, C., Coloma, L. A., & O'c. (2022). Contrasting parental roles shape sex differences in poison frog space use but not navigational performance. *eLife*, *11*, e80483. DOI: 10.7554/eLife.80483

Patel, M., & Ouellette, N. (2022). Formation and dissolution of midge swarms. *Physical Review E*, *105*(3), 034601. DOI: 10.1103/PhysRevE.105.034601

Perea, R., Schroeder, J., & Dirzo, R. (2022). The Herbaceous Understory Plant Community in the Context of the Overstory: An Overlooked Component of Tropical Diversity. *Diversity*, *14*(10), 800. DOI: 10.3390/D14100800/S1

Randolph, S., Ingram, D., Curran, L., Holland Jones, J., & Durham, W. (2022). Urban wild meat markets in Cameroon: Actors and motives. *World Development*, *160*, 106060. DOI: 10.1016/J.WORLDDEV.2022.106060

Reshamwala, H., Raina, P., Hussain, Z., Khan, S., Dirzo, R., & Habib, B. (2022). On the move: spatial ecology and habitat use of red fox in the Trans-Himalayan cold desert. *PeerJ*, *10*, e13967. DOI: 10.7717/PEERJ.13967

Reynolds, A., McIvor, G., Thornton, A., Yang, P., & Ouellette, N. (2022). Stochastic modelling of bird flocks: accounting for the cohesiveness of collective motion. *Journal of the Royal Society Interface*, *19*(189). DOI: 10.1098/rsif.2021.0745

Rule, A., Dill, S., Sun, G., Chen, A., Khawaja, S., Li, I., Zhang, V., & Rozelle, S. (2022). Challenges and Opportunities in Aligning Conservation with Development in China's National Parks: A Narrative Literature Review. *International Journal of Environmental Research and Public Health*, *19*(19), 12778. DOI: 10.3390/IJERPH191912778

Sandin, S. A., Becker, P. A., Becker, C., Brown, K., Erazo, N. G., Figuerola, C., Fisher, R. N., Friedlander, A. M., Fukami, T., Graham, N. A., Gruner, D. S., Holmes, N. D., Holthuijzen, W. A., & Jones, H. (2022). Harnessing island–ocean connections to maximize marine benefits of island conservation. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(51), e2122354119. DOI: 10.1073/pnas.2122354119

Schachat, S., Payne, J., Boyce, C., & Labandeira, C. (2022). Generating and testing hypotheses about the fossil record of insect herbivory with a theoretical ecospace. *Review of Palaeobotany and Palynology*, *297*, 104564. DOI: 10.1016/J.REVPALBO.2021.104564

Searcy, R., Boehm, A., Weinstock, C., Preston, C., Jensen, S., Roman, B., Birch, J., Scholin, C., Van Houtan, K., Kiernan, J., & Yamahara, K. (2022). High-frequency and long-term observations of eDNA from imperiled salmonids in a coastal stream: Temporal dynamics, relationships with environmental factors, and comparisons with conventional observations. *Environmental DNA*, *4*(4), 776-789. DOI: 10.1002/edn3.293

Seetah, K., Manfio, S., Balbo, A., Farr, R., & Florens, F. (2022). Colonization during colonialism: Developing a framework to assess the rapid ecological transformation of Mauritius's pristine ecosystems. *Frontiers in Ecology and Evolution*, *10*, 791539. DOI: 10.3389/fevo.2022.791539

Segnitz, M., Russo, S., & Peay, K. (2022). Interactions with soil fungi alter density dependence and neighborhood effects in a locally abundant dipterocarp species. *Ecology and Evolution*, *12*(1), e8478. DOI: 10.1002/ece3.8478

Shemesh, H., Bruns, T., Peay, K., Kennedy, P., & Nguyen, N. (2022). Changing balance between dormancy and mortality determines the trajectory of ectomycorrhizal fungal spore longevity over a 15-yr burial experiment. *New Phytologist*, *238*(1), 11-15. DOI: 10.1111/NPH.18677

Sun, Y., Oh, D., Duan, L., Ramachandran, P., Ramirez, A., Bartlett, A., Tran, K., Wang, G., Dassanayake, M., & Dinneny, J. (2022). Divergence in the ABA gene regulatory network underlies differential growth control. *Nature Plants*, *8*(5), 549-560. DOI: 10.1038/s41477-022-01139-5

Sundaram, M., Steiner, E., & Gordon, D. (2022). Rainfall, neighbors, and foraging: The dynamics of a population of red harvester ant colonies 1988–2019. *Ecological Monographs*, *92*(2), e1503. DOI: 10.1002/ecm.1503

Taboada, C., Delia, J., Chen, M., Ma, C., Peng, X., Zhu, X., Jiang, L., Vu, T., Zhou, Q., Yao, J., O'Connell, L., & Johnsen, S. (2022). Glassfrogs conceal blood in their liver to maintain transparency. *Science*, *378*(6626), 1315-1320. DOI: 10.1126/SCIENCE.ABL6620

Viteri, M., & Hadly, E. (2022). Spatiotemporal impacts of the Anthropocene on small mammal communities, and the role of small biological preserves in maintaining biodiversity. *Frontiers in Ecology and Evolution*, *10*, 748. DOI: 10.3389/fevo.2022.916239/full

Vitousek, P., Treseder, K., Howarth, R., Menge, D., Vitousek, P., Treseder, K., Howarth, R., & Menge, D. (2022). A "toy model" analysis of causes of nitrogen limitation in terrestrial ecosystems. *Biogeochemistry 2022*, 1-14. DOI: 10.1007/s10533-022-00959-z

Wang, L., Li, D., Yang, K., Guo, X., Bian, C., Nishimura, T., Le, J., Morita, M., Bergmann, D., & Dong, J. (2022). Connected function of PRAF/RLD and GNOM in membrane trafficking controls intrinsic cell polarity in plants. *Nature Communications*, *13*(1), 1-17. DOI: 10.1038/s41467-021-27748-w

Williams, M., Leinfelder, R., Barnosky, A. D., Head, M. J., McCarthy, F. M., Cearreta, A., Himson, S., Holmes, R., Waters, C. N., Zalasiewicz, J., Turner, S., McGann, M., Hadly, E. A., & Stegner, M. (2022). Planetary-scale change to the biosphere signalled by global species translocations can be used to identify the Anthropocene. *Palaeontology*, *65*(4), e12618. DOI: 10.1111/pala.12618

Zhang, D., Spiegelhalder, R., Abrash, E., Nunes, T., Hidalgo, I., Anleu Gil, M., Jesenofsky, B., Lindner, H., Bergmann, D., & Raissig, M. (2022). Opposite polarity programs regulate asymmetric subsidiary cell divisions in grasses. *eLife*, *11*. DOI: 10.7554/ELIFE.79913

FOOD SECURITY

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Anzia, S., Jares, J., & Malhotra, N. (2022). Does Receiving Government Assistance Shape Political Attitudes? Evidence from Agricultural Producers. *American Political Science Review*, *116*(4), 1389-1406. DOI: 10.1017/S0003055422000314

Behrer, A., & Lobell, D. (2022). Higher levels of no-till agriculture associated with lower PM2.5 in the Corn Belt. *Environmental Research Letters*, *17*(9), 094012. DOI: 10.1088/1748-9326/ac816f

Blake, M., Junpeng Zhan, A., Blaine Marchant, D., Teng, C., Walbot, V., Meyers, B., & Danforth, D. (2022). Coexpression network and trans-activation analyses of maize reproductive phasiRNA loci. *The Plant Journal*, *113*(1), 160-173. DOI: 10.1111/tpj.16045

Campolo, J., Ortiz-Monasterio, I., Guerena, D., & Lobell, D. (2022). Evaluating maize yield response to fertilizer and soil in Mexico using ground and satellite approaches. *Field Crops Research*, *276*, 108393. DOI: 10.1016/J.FCR.2021.108393

Deines, J., Guan, K., Lopez, B., Zhou, Q., White, C., Wang, S., & Lobell, D. (2022). Recent cover crop adoption is associated with small maize and soybean yield losses in the United States. *Global Change Biology*, *29*(3), 794-807. DOI: 10.1111/gcb.16489

Edwards, R., Falcon, W., Hadiwidjaja, G., Higgins, M., Naylor, R., & Sumarto, S. (2022). Fight fire with finance: a randomized field experiment to curtail land-clearing fire in Indonesia. *American Economic Association Registry*. TNP2K Working Paper 55-e/2020.

Falcon, W., Hadiwidjaja, G., Edwards, R., Higgins, M., Naylor, R., & Sumarto, S. (2022). Using Conditional Cash Payments to Prevent Land-Clearing Fires: Cautionary Findings from Indonesia. *Agriculture*, *12*(7), 1040. DOI: 10.3390/AGRICULTURE12071040

Falcon, W., Naylor, R., & Shankar, N. (2022). Rethinking Global Food Demand for 2050. *Population and Development Review*, *48*(4), 921-957. DOI: 10.1111/padr.12508

G. Viana, W., Scharwies, J., & Dinneny, J. (2022). Deconstructing the root system of grasses through an exploration of development, anatomy and function. *Plant, Cell & Environmen*t, *45*(3), 602-619. DOI: 10.1111/pce.14270

Ishtiaque, A., Singh, S., Lobell, D., Balwinder-Singh, Fishman, R., & Jain, M. (2022). Prior crop season management constrains farmer adaptation to warming temperatures: Evidence from the Indo-Gangetic Plains. *Science of The Total Environment*, *807*, 151671. DOI: 10.1016/J.SCITOTENV.2021.151671

Kluger, D., Owen, A., & Lobell, D. (2022). Combining randomized field experiments with observational satellite data to assess the benefits of crop rotations on yields. *Environ. Res. Lett*, *17*, 44066. DOI: 10.1088/1748-9326/ac6083

Lee, J., Wang, S., Figueroa, A., Strey, R., Lobell, D., Naylor, R., & Gorelick, S. (2022). Mapping Sugarcane in Central India with Smartphone Crowdsourcing. *Remote Sensing*, *14*(3), 703. DOI: 10.3390/RS14030703

Lin, C., Zhong, L., Song, X., Dong, J., Lobell, D., & Jin, Z. (2022). Early- and in-season crop type mapping without current-year ground truth: Generating labels from historical information via a topology-based approach. *Remote Sensing of Environment*, *274*, 112994. DOI: 10.1016/J.RSE.2022.112994

Liu, L., Xu, W., Lu, X., Zhong, B., Guo, Y., Lu, X., Zhao, Y., He, W., Wang, S., Zhang, X., Liu, X., & Vitousek, P. (2022). Exploring global changes in agricultural ammonia emissions and their contribution to nitrogen deposition since 1980. *Proceedings of the National Academy of Sciences of the United States of Americ*a, *119*(14), e2121998119. DOI: 10.1073/pnas.2121998119

Lobell, D., Azzari, G., Burke, M., Gourlay, S., Jin, Z., Kilic, T., & Murray, S. (2022). Eyes in the Sky, Boots on the Ground: Assessing Satellite and Ground-based Approaches to Crop Yield Measurement and Analysis. *World Bank*. DOI: 10.1093/ajae/aaz051

Lobell, D., Di Tommaso, S., & Burney, J. (2022). Globally ubiquitous negative effects of nitrogen dioxide on crop growth. *Science Advances*, *8*(22), 9909. DOI: 10.1126/sciadv.abm9909

Machala, M., Tan, F., Poletayev, A., Khan, M., & Benson, S. (2022). Overcoming barriers to solar dryer adoption and the promise of multi-seasonal use in India. *Energy for Sustainable Development*, *68*, 18-28. DOI: 10.1016/J.ESD.2022.02.001

Marchant, D., & Walbot, V. (2022). Anther development—The long road to making pollen. *The Plant Cell*, *34*(12), 4677-4695. DOI: 10.1093/PLCELL/KOAC287

Mehrabi, Z., Delzeit, R., Ignaciuk, A., Levers, C., Braich, G., Bajaj, K., Amo-Aidoo, A., Anderson, W., Balgah, R. A., Benton, T. G., Chari, M. M., Ellis, E. C., Gahi, N. Z., Gaupp, F., & Garibaldi, L. (2022). Research priorities for global food security under extreme events. *One Earth*, *5*(7), 756-766. DOI: 10.1016/J.ONEEAR.2022.06.008

Nelms, B., & Walbot, V. (2022). Gametophyte genome activation occurs at pollen mitosis I in maize. *Science*, *375*(6579), 424-429. DOI: 10.1126/science.abl7392

Park, J.-H., Iancu, D., & Plambeck, E. (2022). On the Management of Premade Foods. *SSRN Electronic Journal*. DOI: 10.2139/SSRN.4148756

Simpson, A., Suh, M., Plewa, M., & Mitch, W. (2022). Formation of Oleic Acid Chlorohydrins in Vegetables during Postharvest Chlorine Disinfection. *Environmental Science and Technology*, *56*(2), 1233-1243. DOI: 10.1021/acs.est.1c04362

Singhvi, A., Fitzpatrick, A., Scharwies, J., Dinneny, J., & Arbabian, A. (2022). A Thermoacoustic Imaging System for Noninvasive and Nondestructive Root Phenotyping. *IEEE Transactions on Circuits and Systems II: Express Briefs*, *69*(5), 2493-2497. DOI: 10.1109/TCSII.2022.3159448

Tester, J., Xiao, L., Tinajero-Deck, L., Juarez, L., & Rosas, L. (2022). Food Insecurity Influences Weight Trajectory in Children with Obesity. *Childhood Obesity*, *18*(7), 437-444. DOI: 10.1089/chi.2021.0311

Thorndike, A., Gardner, C., Kendrick, K., Seligman, H., Yaroch, A., Gomes, A., Ivy, K., Scarmo, S., Cotwright, C., & Schwartz, M. (2022). Strengthening US Food Policies and Programs to Promote Equity in Nutrition Security: A Policy Statement from the American Heart Association. *Circulation*, *145*(24), E1077-E1093. DOI: 10.1161/CIR.0000000000001072

Tuckett, A., Rowbotham, S., Hetherington, S., Goddard, J., & King, A. (2022). Using citizen science to empower older adults to improve a food security initiative in Australia. *Health Promotion International*, *37*(1). DOI: 10.1093/HEAPRO/DAAB060

Vitousek, P., Chen, X., Cui, Z., Liu, X., Matson, P., Ortiz-Monasterio, I., Robertson, G., & Zhang, F. (2022). Climate change-induced temporal variation in precipitation increases nitrogen losses from intensive cropping systems: Analysis with a toy model. *Frontiers of Agricultural Science and Engineering*, *9*(3), 457-464. DOI: 10.15302/J-FASE-2022452

Wang, S., Waldner, F., & Lobell, D. (2022). Unlocking Large-Scale Crop Field Delineation in Smallholder Farming Systems with Transfer Learning and Weak Supervision. *Remote Sensing, 14*(22), 5738. DOI: 10.3390/RS14225738

Wegner, G., Murray, K., Springmann, M., Muller, A., Sokolow, S., Saylors, K., & Morens, D. (2022). Averting wildlife-borne infectious disease epidemics requires a focus on socio-ecological drivers and a redesign of the global food system. *eClinicalMedicine*, *47*, 101386. DOI: 10.1016/J.ECLINM.2022.101386

FRESHWATER

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Ahamed, A., Knight, R., & Alam, S. (2022). Integration of hydrologic remote sensing data to estimate changes in groundwater storage across multiple spatial scales. *Second International Meeting for Applied Geoscience & Energy*. DOI: 10.7265/N5TB14TC.

Ahamed, A., Knight, R., Alam, S., Pauloo, R., & Melton, F. (2022). Assessing the utility of remote sensing data to accurately estimate changes in groundwater storage. *Science of The Total Environment*, *807*, 150635. DOI: 10.1016/J.SCITOTENV.2021.150635

Birge, D., Fletcher, S., Siddiqi, A., Al Sumaiti, A., & Wescoat Jr., J. L. (2022). Multicriteria, Multiresolution Modeling of Suburban Residential Landscape Alternatives: Water-Efficient Villas in the Arid Middle East. *Journal of Urban Planning and Development*, *148*(2), 04022010. DOI: 10.1061/%28ASCE%29UP.1943-5444.0000803

Bosma, S., Hamon, F., Mallison, B., & Tchelepi, H. (2022). Smooth implicit hybrid upwinding for compositional multiphase flow in porous media. *Computer Methods in Applied Mechanics and Engineering*, *388*, 114288. DOI: 10.1016/J.CMA.2021.114288

Chen, H., Reinhard, M., You, L., & Gin, K. (2022). Effect of repeated sorption–desorption on irreversible and reversible absorption of hydrophobic perfluoroalkyl acids to freshwater sediment. *Environmental Technology & Innovation*, *28*, 102673. DOI: 10.1016/J.ETI.2022.102673

Chugg, B., Rothbacher, N., Feng, A., Long, X., & Ho, D. (2022). Detecting Environmental Violations with Satellite Imagery in Near Real Time: Land Application under the Clean Water Act. *International Conference on Information and Knowledge Management, Proceedings*, 3052-3062. DOI: 10.1145/3511808.3557104

Clark, B., Gilles, G., & Tarpeh, W. (2022). Resin-Mediated pH Control of Metal-Loaded Ligand Exchangers for Selective Nitrogen Recovery from Wastewaters. *ACS Applied Materials and Interfaces*, *14*(20), 22950-22964. DOI: 10.1021/acsami.1c22316

Davis, J., & Horwitzid, P. (2022). PLOS Water: A bridge and a voice for the water sectors. *PLOS Water*, *1*(2), e0000018. DOI: 10.1371/journal.pwat.0000018

Deucher, R., & Tchelepi, H. (2022). High resolution adaptive implicit method for reactive transport in heterogeneous porous media. *Journal of Computational Physics*, *466*, 111391. DOI: 10.1016/J.JCP.2022.111391

Dewar, N., & Knight, R. (2022). Constructing the resistivity-to-sediment-type transform for the interpretation of airborne electromagnetic data. *Geophysics*, *87*(2), IM37-IM55. DOI: 10.1190/GEO2020-0831.1

Dewey, C., Fox, P., Bouskill, N., Dwivedi, D., Nico, P., & Fendorf, S. (2022). Beaver dams overshadow climate extremes in controlling riparian hydrology and water quality. *Nature Communications, 13*(1), 1-9. DOI: 10.1038/s41467-022-34022-0

Dias, A. C., Fontes, M. P. F., Ferreira, M. dS., Vergütz, L., & Fendorf, S. (2022). Residual As(V) in Aqueous Solutions After Its Removal by Synthetic Minerals. *Water, Air, & Soil Pollution*, *233*(116). DOI: 10.1007/s11270-022-05576-y

Doherty, C., Johnson, L., Volk, J., Mauter, M., Bambach, N., McElrone, A., Alfieri, J., Hipps, L., Prueger, J., Castro, S., Alsina, M., Kustas, W., & Melton, F. (2022). Effects of meteorological and land surface modeling uncertainty on errors in winegrape ET calculated with SIMS. *Irrigation Science*, *40*(4-5), 515-530. DOI: 10.1007/s00271-022-00808-9

Dong, H., Laguna, C., Liu, M., Guo, J., & Tarpeh, W. (2022). Electrified Ion Exchange Enabled by Water Dissociation in Bipolar Membranes for Nitrogen Recovery from Source-Separated Urine. *Environmental Science and Technology*, *56*(22), 16134-16143. DOI: 10.1021/acs.est.2c03771

Dudchenko, A., Hardikar, M., Anand, A., Xin, R., Wang, R., Gopu, C., & Mauter, M. (2022). Guidance on Nusselt Number Correlation Selection in Membrane Distillation. *ACS ES and T Engineering*, *2*(8), 1425-1434. DOI: 10.1021/acsestengg.1c00496

Engel, M., Noël, V., Kukkadapu, R., Boye, K., Bargar, J., & Fendorf, S. (2022). Nitrate Controls on the Extent and Type of Metal Retention in Fine-Grained Sediments of a Simulated Aquifer. *Environmental Science & Technology*, *56*(20), 14452-14461. DOI: 10.1021/acs.est.2c03403

Fletcher, S., Hadjimichael, A., Quinn, J., Osman, K., Giuliani, M., Gold, D., Figueroa, A. J., & Gordon, B. (2022). Equity in Water Resources Planning: A Path Forward for Decision Support Modelers. *Journal of Water Resource Planning and Management*, *128*(7). DOI: 10.1061/(ASCE)WR.1943-5452.0001573

Forghani, M., Qian, Y., Lee, J., Farthing, M., Hesser, T., Kitanidis, P., & Darve, E. (2022). Variational encoder geostatistical analysis (VEGAS) with an application to large scale riverine bathymetry. *Advances in Water Resources*, *170*, 104323. DOI: 10.1061/(ASCE)UP.1943-5444.0000803

Furst, K., Smith, D., Bhatta, L., Islam, M., Sultana, S., Rahman, M., Davis, J., & Mitch, W. (2022). Effects of Intrusion on Disinfection Byproduct Formation in Intermittent Distribution Systems. *ACS Environmental Science and Technology Water*, *2*(5). DOI: 10.1021/acsestwater.1c00493

Gottschalk, I., & Knight, R. (2022). The development of a machine-learning approach to construct a field-scale rock-physics transform. *Geophysics*, *87*(2), MR35-MR48. DOI: 10.1190/GEO2020-0811.1

James, M., & Mitch, W. (2022). Electrochemical Generation of Hydroxide for Precipitative Water Softening. *ACS ES and T Water*, *2*(12), 2677-2685. DOI: 10.1021/acsestwater.2c00451

Jiarui, C., Id, P., Id, P., Hornsby, G., Darmstadt Id, G., & Davis, J. (2022). Necessary conditions for sustainable water and sanitation service delivery in schools: A systematic review. *PLOS ONE*, *17*(7), e0270847. DOI: 10.1371/JOURNAL.PONE.0270847

Kang, S., & Knight, R. (2022). Time-lapse inversion of airborne electromagnetic data for monitoring saltwater intrusion in the Salinas Valley of California, USA. *Second International Meeting for Applied Geoscience & Energy.* DOI: 10.1111/gwat.12656.

Kang, S., Knight, R., & Goebel, M. (2022). Improved Imaging of the Large-Scale Structure of a Groundwater System With Airborne Electromagnetic Data. *Water Resources Research*, *58*(4), e2021WR031439. DOI: 10.1029/2021WR031439

Kang, X., Kokkinaki, A., Shi, X., Yoon, H., Lee, J., Kitanidis, P., & Wu, J. (2022). Integration of Deep Learning-Based Inversion and Upscaled Mass-Transfer Model for DNAPL Mass-Discharge Estimation and Uncertainty Assessment. *Water Resources Research*, *58*(10), e2022WR033277. DOI: 10.1029/2022WR033277

King, J., & Mitch, W. (2022). Electrochemical Reduction of Halogenated Alkanes and Alkenes Using Activated Carbon-Based Cathodes. *Environmental Science and Technology*, *56*(24), 17965-17976. DOI: 10.1021/ACS.EST.2C05608

Knight, R., Steklova, K., Miltenberger, A., Kang, S., Goebel, M., & Fogg, G. (2022). Airborne geophysical method images fast paths for managed recharge of California's groundwater. *Environmental Research Letters, 17*, 124021. DOI: 10.1088/1748-9326/aca344

Lees, M., Knight, R., & Smith, R. (2022). Development and Application of a 1D Compaction Model to Understand 65 Years of Subsidence in the San Joaquin Valley. *Water Resources Research*, *58*(6), e2021WR031390. DOI: 10.1029/2021WR031390

Leonard, L., Vanzin, G., Garayburu-Caruso, V., Lau, S., Beutler, C., Newman, A., Mitch, W., Stegen, J., Williams, K., & Sharp, J. (2022). Disinfection byproducts formed during drinking water treatment reveal an export control point for dissolved organic matter in a subalpine headwater stream. *Water Research X*, *15*, 100144. DOI: 10.1016/J.WROA.2022.100144

Li, Y., Zhang, X., Morgan, V., Lohman, H., Rowles, L., Mittal, S., Kogler, A., Cusick, R., Tarpeh, W., & Guest, J. (2022). QSDsan: an integrated platform for quantitative sustainable design of sanitation and resource recovery systems. *Environmental Science: Water Research & Technology*, *8*(10), 2289-2303. DOI: 10.1039/D2EW00455K

Liu, T., & Mauter, M. (2022). Heat transfer innovations and their application in thermal desalination processes. *Joule*, *6*(6), 1199-1229. DOI: 10.1016/J.JOULE.2022.05.004

Liu, Y., & Mauter, M. (2022). High-Resolution Carbon Accounting Framework for Urban Water Supply Systems. *Environmental Science and Technology*, *56*(19), 13920-13930. DOI: 10.1021/acs.est.2c04127

Mao, S., Lecointre, A., van der Hilst, R., & Campillo, M. (2022). Space-time monitoring of groundwater fluctuations with passive seismic interferometry. *Nature Communications*, *13*(1), 1-9. DOI: 10.1038/s41467-022-32194-3

Mauter, M., Dionysiou, D., & Kim, J. (2022). Technology Baselines and Innovation Priorities for Securing Water Supply. *ACS ES and T Engineering*, *2*(3), 271-272. DOI: 10.1021/acsestengg.2c00014

Mccann, M., Jainesh Mehta, J., Davis, C., & Freyberg, D. (2022). Van Norman Complex Retrospective Risk Evaluation: Assessing the San Fernando Dam Performance during the San Fernando Earthquake. *Lifelines 2022*, *1*, 13-24. DOI: 10.1061/9780784484432.002

Montealegre, M., Greenwood, E., Teichmann, L., Nadimpalli, M., Caduff, L., Swarthout, J., Nydegger, T., Sultana, S., Islam, M., Lanza, V., Luby, S., Pickering, A., & Julian, T. (2022). Drinking Water Chlorination Impact on Fecal Carriage of Extended-Spectrum Beta-Lactamase-Producing Enterobacteriaceae in Bangladeshi Children in a Double-Blind, Cluster-Randomized Controlled Trial. *Environmental Health Perspectives*, *130*(11). DOI: 10.1289/EHP11359

Nadimpalli, M. L., Lanza, V. F., Montealegre, M. C., Sultana, S., Fuhrmeister, E. R., Worby, C. J., Teichmann, L., Caduff, L., Swarthout, J. M., Crider, Y. S., Earl, A. M., Brown, J., Luby, S. P., & Islam, M. A. (2022). Drinking water chlorination has minor effects on the intestinal flora and resistomes of Bangladeshi children. *Nature Microbiology*, *7*(5), 620-629. DOI: 10.1038/s41564-022-01101-3

Pepin, K., Knight, R., Goebel-Szenher, M., & Kang, S. (2022). Managed aquifer recharge site assessment with electromagnetic imaging: Identification of recharge flow paths. *Vadose Zone Journal*, *21*(3), e20192. DOI: 10.1002/vzj2.20192

Pritchard, J., Hawkins, K., Cho, Y.-M., Spahr, S., Struck, S., Higgins, C., & Luthy, R. (2022). Black Carbon-Amended Engineered Media Filters for Improved Treatment of Stormwater Runoff. *ACS Environmental Au*, *3*(1), 34-46. DOI: 10.1021/acsenvironau.2c00037

Ran, N., Sharon-Gojman, R., Larsson, S., Gillor, O., Mauter, M., & Herzberg, M. (2022). Unraveling pH Effects on Ultrafiltration Membrane Fouling by Extracellular Polymeric Substances: Adsorption and Conformation Analyzed with Localized Surface Plasmon Resonance. *Environmental Science and Technology*, *56*(20), 14763-14773. DOI: 10.1021/acs.est.2c03085

Rezazadeh Kalehbasti, P., Lepech, M., & Criddle, C. (2022). Integrated Design and Optimization of Water-Energy Nexus: Combining Wastewater Treatment and Energy System. *Frontiers in Sustainable Cities*, *4*, 40. DOI: 10.3389/FRSC.2022.856996/BIBTEX

Robinson, C., Chugg, B., Anderson, B., Ferres, J., & Ho, D. (2022). Mapping Industrial Poultry Operations at Scale With Deep Learning and Aerial Imagery. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, *15*, 7458-7471. DOI: 10.1109/JSTARS.2022.3191544

Rodriguez, E., Tarpeh, W., Wigginton, K., & Love, N. (2022). Application of plasma for the removal of pharmaceuticals in synthetic urine. *Environmental Science: Water Research & Technology*, *8*(3), 523-533. DOI: 10.1039/D1EW00863C

Shao, X., Johnson, S., & Tarpeh, W. (2022). Quantifying and Characterizing Sulfide Oxidation to Inform Operation of Electrochemical Sulfur Recovery from Wastewater. *ACS ES and T Engineering*, *2*(5), 807-818. DOI: 10.1021/acsestengg.1c00376

Shovkun, I., & Tchelepi, H. (2022). A Cut-Cell Polyhedral Finite Element Model for Coupled Fluid Flow and Mechanics in Fractured Reservoirs. *SPE Journal*, *27*(02), 1221-1243. DOI: 10.2118/203958-PA

Sitaraman, H., & Battiato, I. (2022). Impact of large-scale effects on mass transfer and concentration polarization in Reverse Osmosis membrane systems. *Separation and Purification Technology*, *303*, 122121. DOI: 10.1016/J.SEPPUR.2022.122121

Sivaganesan, M., Willis, J. R., Karim, M., Babatola, A., Catoe, D., Boehm, A. B., Wilder, M., Green, H., Lobos, A., Harwood, V. J., Hertel, S., Klepikow, R., Howard, M. F., Laksanalamai, P., & R. (2022). Interlaboratory performance and quantitative PCR data acceptance metrics for NIST SRM® 2917. *Water Research*, *225,* 119162. DOI: 10.1016/J.WATRES.2022.119162

Song, G., Roubinet, D., Zhou, Z., Wang, X., Tartakovsky, D., & Song, X. (2022). Estimation of Statistical Properties of Fracture Networks from Thermal-tracer Experiments. *46th Workshop on Geothermal Reservoir Engineering*. DOI: hal-03806149

Spahr, S., Teixidó, M., Gall, S., Pritchard, J., Hagemann, N., Helmreich, B., & Luthy, R. (2022). Performance of biochars for the elimination of trace organic contaminants and metals from urban stormwater. *Environmental Science: Water Research & Technology, 8*(6), 1287-1299. DOI: 10.1039/D1EW00857A

Teixidó, M., Charbonnet, J., LeFevre, G., Luthy, R., & Sedlak, D. (2022). Use of pilot-scale geomedia-amended biofiltration system for removal of polar trace organic and inorganic contaminants from stormwater runoff. *Water Research*, *226*, 119246. DOI: 10.1016/J.WATRES.2022.119246

Touati, K., Dudchenko, A., Mauter, M., & Rahaman, M. (2022). Desalination Process Design Assisted by Osmotic Power for High Water Recovery and Low Energy Consumption. *ACS Sustainable Chemistry & Engineering*, *10*(7), 2409-2419. DOI: 10.1021/acssuschemeng.1c07078

Viswanathan, H., Ajo-Franklin, J., Birkholzer, J., Carey, J., Guglielmi, Y., Hyman, J., Karra, S., Pyrak-Nolte, L., Rajaram, H., Srinivasan, G., & Tartakovsky, D. (2022). From Fluid Flow to Coupled Processes in Fractured Rock: Recent Advances and New Frontiers. *Reviews of Geophysics*, *60*(1), e2021RG000744. DOI: 10.1029/2021RG000744

Wang, L., Kitanidis, P., & Caers, J. (2022). Hierarchical Bayesian Inversion of Global Variables and Large-Scale Spatial Fields. *Water Resources Research*, *58*(5), e2021WR031610. DOI: 10.1029/2021WR031610

Wang, Y., Zechner, M., Mern, J., Kochenderfer, M., & Caers, J. (2022). A sequential decision-making framework with uncertainty quantification for groundwater management. *Advances in Water Resources*, *166*, 104266. DOI: 10.1016/J.ADVWATRES.2022.104266

Womble, P., Townsend, A., & Szeptycki, L. (2022). Decoupling environmental water markets from water law. *Environmental Research Letters*, *17*(6), 065007. DOI: 10.1088/1748-9326/ac6d6d

Yamada, Y., Zhang, X., Henderson, M. E., Sagayama, H., Pontzer, H., Watanabe, D., Yoshida, T., Kimura, M., Ainslie, P. N., Andersen, L. F., Anderson, L. J., Arab, L., Baddou, I., Bedu-Addo, K., & Blaak, E. (2022). Variation in human water turnover associated with environmental and lifestyle factors. *Science*, *378*(6622), 909-915. DOI: 10.1126/science.abm8668

Yang, H., Tchelepi, H., & Tartakovsky, D. (2022). Method of Distributions for Two-Phase Flow in Heterogeneous Porous Media. *Water Resources Research*, *58*(12), e2022WR032607. DOI: 10.1029/2022WR032607

Yao, Y., Fringer, O., & Criddle, C. (2022). CFD-accelerated bioreactor optimization: reducing the hydrodynamic parameter space. *Environmental Science: Water Research & Technology*, *8*(3), 456-464. DOI: 10.1039/D1EW00666E

Zhang, Y., Dekas, A., Hawkins, A., Primo, J., Gorbatenko, O., Horne, R., Yang, F., & Yang, P. (2022). Comparison of Microbial Profiling and Tracer Testing for the Characterization of Injector-Producer Interwell Connectivities. *Water*, *14*(18), 2921. DOI: 10.3390/W14182921

Zhang, Y., Horne, R., Hawkins, A., Primo, J., Gorbatenko, O., & Dekas, A. (2022). Geological activity shapes the microbiome in deep-subsurface aquifers by advection. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(25), e2113985119. DOI: 10.1073/pnas.2113985119

Zhou, Z., Zabaras, N., & Tartakovsky, D. (2022). Deep Learning for Simultaneous Inference of Hydraulic and Transport Properties. *Water Resources Research*, *58*(10), e2021WR031438. DOI: 10.1029/2021WR031438

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Alexandridis, N., Marion, G., Chaplin-Kramer, R., Dainese, M., Ekroos, J., Grab, H., Jonsson, M., Karp, D. S., Meyer, C., O'Rourke, M. E., Pontarp, M., Poveda, K., Seppelt, R., Smith, H. G., & Walters. (2022). Archetype models upscale understanding of natural pest control response to land-use change. *Ecological Applications*, *32*(8), e2696. DOI: 10.1002/eap.2696

Almeida, R., Schmitt, R., Castelletti, A., Flecker, A., Harou, J., Heilpern, S., Kittner, N., Mathias Kondolf, G., Opperman, J., Shi, Q., Gomes, C., & McIntyre, P. (2022). Strategic planning of hydropower development: balancing benefits and socioenvironmental costs. *Current Opinion in Environmental Sustainability*, *56*. DOI: 10.1016/J.COSUST.2022.101175

Almeida, R., Schmitt, R., Grodsky, S., Flecker, A., Gomes, C., Zhao, L., Liu, H., Barros, N., Kelman, R., & McIntyre, P. (2022). Floating solar power could help fight climate change — let's get it right. *Nature*, *606*(7913), 246-249. DOI: 10.1038/d41586-022-01525-1

Bussettini, M., & Schmitt, R. (2022). Sediment Mining: Development and Implementation of Policies. *Encyclopedia of Inland Waters*, 231-238. DOI: 10.1016/B978-0-12-819166-8.00203-6

Chaplin-Kramer, R. (2022). Scale matters in service supply. *Nature Ecology & Evolution*, 1-2. DOI: 10.1038/s41559-022-01924-7

Chaplin-Kramer, R., Chappell, M., & Bennett, E. (2022). Un-yielding: Evidence for the agriculture transformation we need. *Annals of the New York Academy of Sciences*. DOI: 10.1111/nyas.14950

Daily, G., & Ruckelshaus, M. (2022). 25 years of valuing ecosystems in decision-making. *Nature*, *606*(7914), 465-466. DOI: 10.1038/d41586-022-01480-x

Ding, Z., Angarita, H., Montesino Cárceres, C., Lavado-Casimiro, W., Barreto Escobedo, C. D., Guerrero, L., Zheng, H., Schmitt, R., Ding, Z., Angarita, H., Montesino Cárceres, C., Lavado-Casimiro, W., & Barr. (2022). Studying spatial agreement of catchment response to climate and landuse change under uncertainty for prioritizing investment into hydropower catchments. *EGUGA*, EGU22-6680. DOI: 10.1038/d41586-022-01480-x

Echeverri, A., Smith, J., MacArthur-Waltz, D., Lauck, K., Anderson, C., Vargas, R., Quesada, I., Wood, S., Chaplin-Kramer, R., & Daily, G. (2022). Biodiversity and infrastructure interact to drive tourism to and within Costa Rica. P*roceedings of the National Academy of Sciences of the United States of America*, *119*(11), e2107662119. DOI: 10.1073/pnas.2107662119

Greaves, D., Jin, S., Wong, P., Trifonova, N., Scott, B., Griffin, R., Pennock, S., & Jeffrey, H. (2022). An ecosystem-based natural capital evaluation framework that combines environmental and socio-economic implications of offshore renewable energy developments. *Progress in Energy*, *4*(3), 032005. DOI: 10.1088/2516-1083/AC702A

Guerry, A., Silver, J., Beagle, J., Wyatt, K., Arkema, K., Lowe, J., Hamel, P., Griffin, R., Wolny, S., Plane, E., Griswold, M., Papendick, H., & Sharma, J. (2022). Protection and restoration of coastal habitats yield multiple benefits for urban residents as sea levels rise. *npj Urban Sustainability*, *2*(1), 1-12. DOI: 10.1038/s42949-022-00056-y

Hatchard, S., Schmitt, R., Pianosi, F., Savage, J., Bates, P., Hatchard, S., Schmitt, R., Pianosi, F., Savage, J., & Bates, P. (2022). Hydropower Portfolio Site and Design using a Simulation - Optimisation Model incorporating High Resolution Hydraulic Modelling in Data Scarce Regions. *EGUGA*. DOI: 10.5194/EGUSPHERE-EGU22-8044

Hopkins, S. R., Lafferty, K. D., Wood, C. L., Olson, S. H., Buck, J. C., De Leo, G. A., Fiorella, K. J., Fornberg, J. L., Garchitorena, A., Jones, I. J., Kuris, A. M., Kwong, L. H., LeBoa, C., Leon, A. E., & Lu. (2022). Evidence gaps and diversity among potential win–win solutions for conservation and human infectious disease control. *The Lancet Planetary Health*, *6*(8), e694-e705. DOI: 10.1016/S2542-5196(22)00148-6

Jones, I., Sokolow, S., & De Leo, G. (2022). Three reasons why expanded use of natural enemy solutions may offer sustainable control of human infections. *People and Nature*, *4*(1), 32-43. DOI: 10.1002/pan3.10264

Kondolf, G. M., Schmitt, R. J., Carling, P. A., Goichot, M., Keskinen, M., Arias, M. E., Bizzi, S., Castelletti, A., Cochrane, T. A., Darby, S. E., Kummu, M., Minderhoud, P. S., Nguyen, D., Nguyen, H. T., Nguyen, N. T., Oeurng, C., Opperman, J., & Rubin. (2022). Save the Mekong Delta from drowning. *Science, 376(*6593), 583-585. DOI: 10.1126/science.abm5176

Langhans, K. E., Schmitt, R. J., Chaplin-Kramer, R., Anderson, C. B., Vargas Bolaños, C., Vargas Cabezas, F., Dirzo, R., Goldstein, J. A., Horangic, T., Miller Granados, C., Powell, T. M., & Smith. (2022). Modeling multiple ecosystem services and beneficiaries of riparian reforestation in Costa Rica. *Ecosystem Services*, *57*, 101470. DOI: 10.1016/J.ECOSER.2022.101470

Li, W., Ashlagi, I., & Lo, I. (2022). Simple and Approximately Optimal Contracts for Payment for Ecosystem Services. *Management Science.* DOI: 10.1287/mnsc.2021.4273

Liu, Z. Y., Chamberlin, A. J., Tallam, K., Jones, I. J., Lamore, L. L., Bauer, J., Bresciani, M., Wolfe, C. M., Casagrandi, R., Mari, L., Gatto, M., Diongue, A. K., Toure, L., Rohr, J. R., & Riveau, G. (2022). Deep Learning Segmentation of Satellite Imagery Identifies Aquatic Vegetation Associated with Snail Intermediate Hosts of Schistosomiasis in Senegal, Africa. *Remote Sensing*, *14*(6), 1345. DOI: 10.3390/RS14061345

Nova, N., Athni, T., Childs, M., Mandle, L., & Mordecai, E. (2022). *Global Change and Emerging Infectious Diseases*, *14*, 333-354. DOI: 10.1146/annurev-resource-111820-024214

Pascal, U., Balvanera, P., Christie, M., Baptiste, B., González-Jiménez, D., Anderson, C. B., Athayde, S., Barton, D. N., Chaplin-Kramer, R., Jacobs, S., Eszter, K., Kumar, R., Lazos, E., & Martin. (2022). Summary for policymakers of the methodological assessment of the diverse values and valuation of nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). *Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem*. DOI: 10.5281/ZENODO.6832427

Rosenheim, J., Cluff, E., Lippey, M., Cass, B., Paredes, D., Parsa, S., Karp, D., Chaplin-Kramer, R., & by Fred Gould, E. (2022). Increasing crop field size does not consistently exacerbate insect pest problems. Proceedings of the *National Academy of Sciences*, *119*(37), e2208813119. DOI: 10.1073/pnas.2208813119

Sarira, T., Zeng, Y., Neugarten, R., Chaplin-Kramer, R., & Koh, L. (2022). Co-benefits of forest carbon projects in Southeast Asia. *Nature Sustainability, 5*(5), 393-396. DOI: 10.1038/s41893-022-00849-0

Schling, M., Guerrero Compeán, R., Pazos, N., Bailey, A., Arkema, K., & Ruckelshaus, M. (2022). The Economic Impact of Sargassum: Evidence from the Mexican Coast. *IADB: Inter-American Development Bank*. DOI: 10.18235/0004470

Schmitt, R., Rosa, L., & Daily, G. (2022). Global expansion of sustainable irrigation limited by water storage. *Proceedings of the National Academy of Sciences*, *119*(47). DOI: 10.1073/pnas.2214291119

Schmitt, R., Rosa, L., Daily, G., Schmitt, R., Rosa, L., & Daily, G. (2022). Irrigation storage is a blind spot for analyzing and mitigating externalities of future water infrastructure. E*GUGA*, EGU22-6023. DOI: 10.5194/EGUSPHERE-EGU22-6023

Serra-Llobet, A., Jähnig, S. C., Geist, J., Kondolf, G. M., Damm, C., Scholz, M., Lund, J., Opperman, J. J., Yarnell, S. M., Pawley, A., Shader, E., Cain, J., Zingraff-Hamed, A., Grantham, T. E., & Eisenste. (2022). Restoring Rivers and Floodplains for Habitat and Flood Risk Reduction: Experiences in Multi-Benefit Floodplain Management From California and Germany. *Frontiers in Environmental Science*, *9*, 765. DOI: 10.3389/FENVS.2021.778568/BIBTEX

Smith, O., Kennedy, C., Echeverri, A., Karp, D., Latimer, C., Taylor, J., Wilson-Rankin, E., Owen, J., & Snyder, W. (2022). Complex landscapes stabilize farm bird communities and their expected ecosystem services. *Journal of Applied Ecology*, *59*(4). DOI: 10.1111/1365-2664.14104

Talukdar, I., Kowal, V., Huang, B., & Weil, C. (2022). Vegetation Drastically Reduces Wind Erosion: An Implementation of the RWEQ in the Mongolian Gobi Steppe. *Land, 11*(8), 1204. DOI: 10.3390/LAND11081204

Timmers, R., van Kuijk, M., Verweij, P. A., Ghazoul, J., Hautier, Y., Laurance, W. F., Arriaga-Weiss, S. L., Askins, R. A., Battisti, C., Berg, Å., Daily, G. C., Estades, C. F., Frank, B., & Kurosawa, R. (2022). Conservation of birds in fragmented landscapes requires protected areas. *Frontiers in Ecology and the Environment*, *20*(6), 361-369. DOI: 10.1002/FEE.2485

Wedding, L., Green, S., Reiter, S., Arrigo, K., Hazen, L., Ruckelshaus, M., van der Grient, J., Bailey, R., Cameron, M., Leape, J., Levi, M., Merkl, A., Mills, M., Monismith, S., Ouellette, N., van Dijken, G., & Micheli, F. (2022). Linking multiple stressor science to policy opportunities through network modeling. *Marine Policy*, *146*, 105307. DOI: 10.1016/J.MARPOL.2022.105307

Wedding, L., Reiter, S., Moritsch, M., Hartge, E., Reiblich, J., Gourlie, D., & Guerry, A. (2022). Embedding the value of coastal ecosystem services into climate change adaptation planning. *PeerJ*, *10*, e13463. DOI: 10.7717/PEERJ.13463

Zuercher, R., Ban, N., Flannery, W., Guerry, A., Halpern, B., Magris, R., Mahajan, S., Motzer, N., Spalding, A., Stelzenmüller, V., & Kramer, J. (2022). Enabling conditions for effective marine spatial planning. *Marine Policy*, *143*, 105141. DOI: 10.1016/J.MARPOL.2022.105141

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Andrzejaczek, S., Chapple, T., Jorgenson, S., Anderson, S., Castleton, M., Kanive, P., White, T., & Block, B. (2022). Multi-Decadal High-Resolution Data Reveal the Cryptic Vertical Movement Patterns of a Large Marine Predator Along the Californian Coast Atlantic Bluefin tuna stock assessment and simulation modeling View project. *Frontiers in Marine Scienc*e, *9*. DOI: 10.3389/fmars.2022.835576

Andrzejaczek, S., Lucas, T. C., Goodman, M. C., Hussey, N. E., Armstrong, A. J., Carlisle, A., Coffey, D. M., Gleiss, A. C., Huveneers, C., Jacoby, D. M., Meekan, M. G., Mourier, J., Peel, L. R., & Abrant. (2022). Diving into the vertical dimension of elasmobranch movement ecology. *Science Advances*, *8*(33), 1754. DOI: 10.1126/sciadv.abo1754

Ardyna, M., Hamilton, D. S., Harmel, T., Lacour, L., Bernstein, D. N., Laliberté, J., Horvat, C., Laxenaire, R., Mills, M. M., van Dijken, G., Polyakov, I., Claustre, H., Mahowald, N., & Arrigo, K. R. (2022). Wildfire aerosol deposition likely amplified a summertime Arctic phytoplankton bloom. *Communications Earth & Environment*, *3*(1), 1-8. DOI: 10.1038/s43247-022-00511-9

Arrigo, K. (2022). Research in Analog Environments to Enable Studies of Ocean Worlds. *Oceanography*, *35*(1), 39-44. DOI: 10.5670/oceanog.2021.415

Babey, T., Boye, K., Tolar, B., Engel, M., Noël, V., Perzan, Z., Kumar, N., Francis, C., Bargar, J., & Maher, K. (2022). Simulation of anoxic lenses as exporters of reactivity in alluvial aquifer sediments. G*eochimica et Cosmochimica Acta*, *334*, 119-134. DOI: 10.1016/J.GCA.2022.07.018

Behrens, B., Yokoyama, Y., Miyairi, Y., Sproson, A., Yamane, M., Jimenez-Espejo, F., McKay, R., Johnson, K., Escutia, C., & Dunbar, R. (2022). Beryllium isotope variations recorded in the Adélie Basin, East Antarctica reflect Holocene changes in ice dynamics, productivity, and scavenging efficiency. *Quaternary Science Advances*, *7*, 100054. DOI: 10.1016/J.QSA.2022.100054

Bierlich, K. C., Hewitt, J., Schick, R. S., Pallin, L., Dale, J., Friedlaender, A. S., Christiansen, F., Sprogis, K. R., Dawn, A. H., Bird, C. N., Larsen, G. D., Nichols, R., Shero, M. R., Goldbogen, J., & Rea. (2022). Seasonal gain in body condition of foraging humpback whales along the western Antarctic Peninsula. *Frontiers in Marine Science*, *9*, 1036860. DOI: 10.3389/FMARS.2022.1036860

Blondin, H., Armstrong, K., Hazen, E., Oestreich, W., Santos, B., Haulsee, D., Mikles, C., Knight, C., Bennett, A., & Crowder, L. (2022). Land-dependent marine species face climate-driven impacts on land and at sea. *Marine Ecology Progress Series*, *699*, 181-198. DOI: 10.3354/MEPS14174

Borja, A., Elliott, M., Basurko, O., Fernández Muerza, A., Micheli, F., Zimmermann, F., & Knowlton, N. (2022). #OceanOptimism: Balancing the Narrative About the Future of the Ocean. *Frontiers in Marine Science*, *9*, 1211. DOI: 10.3389/FMARS.2022.886027/BIBTEX

Buessecker, S., Palmer, M., Lai, D., Dimapilis, J., Mayali, X., Mosier, D., Jiao, J. Y., Colman, D. R., Keller, L. M., St. John, E., Miranda, M., Gonzalez, C., Gonzalez, L., Sam, C., & Villa, C. (2022). An essential role for tungsten in the ecology and evolution of a previously uncultivated lineage of anaerobic, thermophilic Archaea. *Nature Communications, 13*(1), 1-13. DOI: 10.1038/s41467-022-31452-8

Burford, B., Wild, L., Schwarz, R., Chenoweth, E., Sreenivasan, A., Elahi, R., Carey, N., Hoving, H.-J., Straley, J., & Denny, M. (2022). Rapid Range Expansion of a Marine Ectotherm Reveals the Demographic and Ecological Consequences of Short-Term Variability in Seawater Temperature and Dissolved Oxygen. *The American Naturalist*, *199*(4). DOI: 10.1086/718575

Burford, B., Williams, R., Demetras, N., Carey, N., Goldbogen, J., Gilly, W., Harding, J., & Denny, M. (2022). The limits of convergence in the collective behavior of competing marine taxa. *Ecology and Evolution*, *12*(3), e8747. DOI: 10.1002/ece3.8747

Cade, D., Kahane-Rapport, S., Wallis, B., Goldbogen, J., & Friedlaender, A. (2022). Evidence for Size-Selective Predation by Antarctic Humpback Whales. *Frontiers in Marine Science*, *9*, 33. DOI: 10.3389/FMARS.2022.747788/BIBTEX

Carlson, R., Li, J., Crowder, L., & Asner, G. (2022). Large-scale effects of turbidity on coral bleaching in the Hawaiian islands. Frontiers in *Marine Science, 9*, 969472. DOI: 10.3389/FMARS.2022.969472

Caruso, C., Rocha de Souza, M., Ruiz-Jones, L., Conetta, D., Hancock, J., Hobbs, C., Hobbs, C., Kahkejian, V., Kitchen, R., Marin, C., Monismith, S., Madin, J., Gates, R., & Drury, C. (2022). Genetic patterns in Montipora capitata across an environmental mosaic in Kāne'ohe Bay, O'ahu, Hawai'i. *Molecular Ecology*, *31*(20), 5201-5213. DOI: 10.1111/mec.16655

Casey, C., Weindorf, S., Levy, E., Linsky, J., Cade, D., Goldbogen, J., Nowacek, D., & Friedlaender, A. (2022). Acoustic signalling and behaviour of Antarctic minke whales (Balaenoptera bonaerensis). Royal Society *Open Science*, *9*(7), 211557. DOI: 10.1098/rsos.211557

Chang, G., Egan, G., McNeil, J., McWilliams, S., Jones, C., Spada, F., Monismith, S., & Fringer, O. (2022). Seasonal particle responses to near-bed shear stress in a shallow, wave- and current-driven environment. *Limnology and Oceanography Letters*, *7*(2), 175-183. DOI: 10.1002/lol2.10221

Chirayath, V., Bagshaw, E., Craft, K., Dierssen, H., Lim, D., Malaska, M., Pizarro, O., Purkis, S., Schroeder, D., Sobron, P., Waller, S., & Winebrenner, D. (2022). Oceans across the solar system and the search for extraoceanic life. *Oceanography, 35*(1), 54-65. jstor.org/stable/27155893

Cinay, T., Dumit, D., Woosley, R., Boles, E., Kwiecinski, J., Mullen, S., Tamasi, T., Wolf, M., Kelly, C., Travis, N., Casciotti, K., & Babbin, A. (2022). Coincident biogenic nitrite and pH maxima arise in the upper anoxic layer in the Eastern Tropical North Pacific. *Global Biogeochemical Cycles,* e2022GB007470. DOI: 10.1029/2022GB007470

Colton, M. A., Mcmanus, L. C., Schindler, D. E., Mumby, P. J., Palumbi, S. R., Webster, M. M., Essington, T. E., Fox, H. E., Forrest, D. L., Schill, S. R., Pollock, F. J., Defilippo, L. B., Tekwa, E. W., & Walsworth, T. (2022). Coral conservation in a warming world must harness evolutionary adaptation. *Nature Ecology & Evolution*, *6*, 1405-1407. DOI: 10.1038/s41559-022-01854-4

Conners, M. G., Sisson, N. B., Agamboue, P. D., Atkinson, P. W., Baylis, A. M., Benson, S. R., Block, B. A., Bograd, S. J., Bordino, P., Bowen, W. D., Brickle, P., Bruno, I. M., González Carman, V., & C. (2022). Mismatches in Scale Between Mobile Marine Megafauna and Global Marine Protected Areas. *Frontiers in Marine Science*, *9*, 897104. DOI: 10.3389/FMARS.2022.897104

Crane, R., & Denny, M. (2022). Bivalves maintain repair when faced with chronically repeated mechanical stress. *Journal of Experimental Biology*, *225*(10). DOI: 10.1242/JEB.243813/275548

Cryan, D., Low, N., Litvin, S., Osenberg, C., & Micheli, F. (2022). Trophic ecology of an abundant kelp forest echinoderm, the bat star Patiria miniata. *Marine Ecology Progress Series*, *696*, 57-68. DOI: 10.3354/MEPS14127

Culberg, R., Schroeder, D., & Steinbrügge, G. (2022). Double ridge formation over shallow water sills on Jupiter's moon Europa. *Nature Communications*, *13*(1), 1-10. DOI: 10.1038/s41467-022-29458-3

Czapanskiy, M., Ponganis, P., Fahlbusch, J., Schmitt, T., & Goldbogen, J. (2022). An accelerometer-derived ballistocardiogram method for detecting heart rate in free-ranging marine mammals. *Journal of Experimental Biology*, *225*(10). DOI: 10.1242/JEB.243872/VIDEO-1

Dale, J., Brodie, S., Carlisle, A., Castleton, M., Hazen, E., Bograd, S., Block, B., Jonathan Dale, C., & Marine, H. (2022). Global habitat loss of a highly migratory predator, the blue marlin (Makaira nigricans). *Diversity and Distributions*, *28*(9), 2020-2034. DOI: 10.1111/ddi.13606

de Vargas, C., Le Bescot, N., Pollina, T., Henry, N., Romac, S., Colin, S., Haëntjens, N., Carmichael, M., Berger, C., Le Guen, D., Decelle, J., Mahé, F., Poulain, J., Malpot, E., & Beaumont, C. (2022). Plankton Planet: A frugal, cooperative measure of aquatic life at the planetary scale. *Frontiers in Marine Science*, *9*, 1419. DOI: 10.3389/FMARS.2022.936972/BIBTEX

DeFilippo, L., McManus, L., Schindler, D., Pinsky, M., Colton, M., Fox, H., Tekwa, E., Palumbi, S., Essington, T., & Webster, M. (2022). Assessing the potential for demographic restoration and assisted evolution to build climate resilience in coral reefs. *Ecological Applications, 32*(7), e2650. DOI: 10.1002/eap.2650

Denny, M., & Dowd, W. (2022). Elevated Salinity Rapidly Confers Cross-Tolerance to High Temperature in a Splash-Pool Copepod. *Integrative Organismal Biology*, *4*(1), 1-17. DOI: 10.1093/IOB/OBAC037

Denny, M., & Wesley Dowd, W. (2022). Physiological Consequences of Oceanic Environmental Variation: Life from a Pelagic Organism's Perspective. *Annual Review of Marine Science*, *14*, 25-48. DOI: 10.1146/annurev-marine-040221-115454

Deutsch, C., Penn, J., Verberk, W., Inomura, K., Endress, M.-G., & Payne, J. (2022). Impact of warming on aquatic body sizes explained by metabolic scaling from microbes to macrofauna. *Proceedings of the National Academy of Sciences*, *119*(28), e2201345119. DOI: 10.1073/pnas.2201345119

Dong, Y., Liao, M., Han, G., & Somero, G. (2022). An integrated, multi-level analysis of thermal effects on intertidal molluscs for understanding species distribution patterns. *Biological Reviews*, 97(2), 554-581. DOI: 10.1111/brv.12811

Druon, J. N., Campana, S., Vandeperre, F., Hazin, F. H., Bowlby, H., Coelho, R., Queiroz, N., Serena, F., Abascal, F., Damalas, D., Musyl, M., Lopez, J., Block, B., Afonso, P., Dewar, H., & Sab. (2022). Global-Scale Environmental Niche and Habitat of Blue Shark (Prionace glauca) by Size and Sex: A Pivotal Step to Improving Stock Management. *Frontiers In Marine Science, 9*, 828412. DOI: 10.3389/FMARS.2022.828412

Egan, G., Chang, G., Manning, A., Monismith, S., & Fringer, O. (2022). On the Variability of Floc Characteristics in a Shallow Estuary. *Journal of Geophysical Research: Oceans*, *127*(6), e2021JC018343. DOI: 10.1029/2021JC018343

Fahlbusch, J., Czapanskiy, M., Calambokidis, J., Cade, D., Abrahms, B., Hazen, E., & Goldbogen, J. (2022). Blue whales increase feeding rates at fine-scale ocean features. *Proceedings of the Royal Society B*, *289*(1981). DOI: 10.1098/rspb.2022.1180

Ferguson, C. E., Tuxson, T., Mangubhai, S., Jupiter, S., Govan, H., Bonito, V., Alefaio, S., Anjiga, M., Booth, J., Boslogo, T., Boso, D., Brenier, A., Caginitoba, A., Ciriyawa, A., & Fahai'ono, J. (2022). Local practices and production confer resilience to rural Pacific food systems during the COVID-19 pandemic. *Marine Policy, 137*, 104954. DOI: 10.1016/J.MARPOL.2022.104954

Fraschetti, S., Fabbrizzi, E., Tamburello, L., Uyarra, M. C., Micheli, F., Sala, E., Pipitone, C., Badalamenti, F., Bevilacqua, S., Boada, J., Cebrian, E., Ceccherelli, G., Chiantore, M., & D'Anna, G. (2022). An integrated assessment of the Good Environmental Status of Mediterranean Marine Protected Areas. *Journal of Environmental Management*, *305*, 114370. DOI: 10.1016/J.JENVMAN.2021.114370

Frazão Santos, C., Agardy, T., Allison, E. H., Bennett, N. J., Blythe, J. L., Calado, H., Crowder, L. B., Day, J. C., Flannery, W., Gissi, E., Gjerde, K. M., Gobin, J. F., Mulalap, C. Y., & Orbach, M. (2022). A sustainable ocean for all. *npj Ocean Sustainability*, *1*(1), 1-2. DOI: 10.1038/s44183-022-00004-4

Freitas, C., Freitas, M., Andrzejaczek, S., Dale, J., Whippen, W., & Block, B. (2022). First insights into the movements and vertical habitat use of blue marlin (Makaira nigricans) in the eastern North Atlantic. *Animal Biotelemetry*, *10*, 12. DOI: 10.1186/s40317-022-00284-0

Frey, C., Sun, X., Szemberski, L., Casciotti, K., Garcia-Robledo, E., Jayakumar, A., Kelly, C., Lehmann, M., & Ward, B. (2022). Kinetics of nitrous oxide production from ammonia oxidation in the Eastern Tropical North Pacific. *Limnology and Oceanography*, *68*(2), 424-438. DOI: 10.1002/lno.12283

Gaill, F., Brodie Rudolph, T., Lebleu, L., Allemand, D., Blasiak, R., Cheung, W. W., Claudet, J., Gerhardinger, L. C., Le Bris, N., Levin, L., Pörtner, H. O., Visbeck, M., Zivian, A., & Bahurel, P. (2022). An evolution towards scientific consensus for a sustainable ocean future. *npj Ocean Sustainability*, *1*, 7. DOI: 10.1038/s44183-022-00007-1

Gakhar, S., Koseff, J., & Ouellette, N. T. (2022). Extracting free-surface expressions of underwater features. *Experiments in Fluids*, *63*, 138. DOI: 10.1007/S00348-022-03491-W

Galanis, M., Shattuck, M., O'Hern, C., & Ouellette, N. (2022). Directional strengthening and weakening in hydrodynamically sheared granular beds. *Physical Review Fluids*, *7*(1), 013802. DOI: 10.1103/PhysRevFluids.7.013802

German, C., Arrigo, K., Murray, A., & Rhoden, A. (2022). Planetary oceanography: Leveraging expertise among earth and planetary science. *Oceanography*, *35*(1), 10-15. DOI: 10.5670/oceanog.2021.410

Gilly, W., Markaida, U., Daniel, P., Frawley, T., Robinson, C., Gómez-Gutiérrez, J., Hyun, D., Soliman, J., Pandey, P., & Rosenzweig, L. (2022). Long-term hydrographic changes in the Gulf of California and ecological impacts: A crack in the World's Aquarium? *Progress in Oceanography*, *206*, 102857. DOI: 10.1016/J.POCEAN.2022.102857

Gilmour, M., Adams, J., Block, B., Caselle, J., Friedlander, A., Game, E., Hazen, E., Holmes, N., Lafferty, K., Maxwell, S., McCauley, D., Oleson, E., Pollock, K., Shaffer, S., Wolff, N., & Wegmann, A. (2022). Evaluation of MPA designs that protect highly mobile megafauna now and under climate change scenarios. *Global Ecology and Conservation*, *35*. DOI: 10.1016/J.GECCO.2022.E02070

Gissi, E., Maes, F., Kyriazi, Z., Ruiz-Frau, A., Santos, C. F., Neumann, B., Quintela, A., Alves, F. L., Borg, S., Chen, W., da Luz Fernandes, M., Hadjimichael, M., Manea, E., & Marques, M. (2022). Contributions of marine area-based management tools to the UN sustainable development goals. *Journal of Cleaner Production*, *330*, 129910. DOI: 10.1016/J.JCLEPRO.2021.129910

Gissi, E., Maes, F., Kyriazi, Z., Ruiz-Frau, A., Santos, C. F., Neumann, B., Quintela, A., Alves, F. L., Borg, S., Chen, W., Fernandes, M. d., Hadjimichael, M., Manea, E., & Marques, M. (2022). Data about marine area-based management tools to assess their contribution to the UN sustainable development goals. *Data in Brief*, *40*, 107704. DOI: 10.1016/J.DIB.2021.107704

Gleason, A., Rittman, D., Bolme, C., Galtier, E., Lee, H., Granados, E., Ali, S., Lazicki, A., Swift, D., Celliers, P., Militzer, B., Stanley, S., & Mao, W. (2022). Dynamic compression of water to conditions in ice giant interiors. *Scientific Reports*, *12*(1), 1-11. DOI: 10.1038/s41598-021-04687-6

Goodman, M., Carroll, G., Brodie, S., Grüss, A., Thorson, J., Kotwicki, S., Holsman, K., Selden, R., Hazen, E., & De Leo, G. (2022). Shifting fish distributions impact predation intensity in a sub-Arctic ecosystem. *Ecography*, *9*, e06084. DOI: 10.1111/ecog.06084

Gough, W., Cade, D., Czapanskiy, M., Potvin, ;., Fish, F., Shirel, ;., Kahane-Rapport, R., Savoca, M., Bierlich, K., Johnston, D., Friedlaender, A., Szabo, A., Bejder, L., & Goldbogen, J. (2022). Fast and Furious: Energetic Tradeoffs and Scaling of High-Speed Foraging in Rorqual Whales. *Integrative Organismal Biology*, *4*(1), obac038. DOI: 10.1093/iob/obac038/6678006

Hao, X., Wu, J., Rogers, J., Fringer, O., & Shen, L. (2022). A high-order spectral method for effective simulation of surface waves interacting with an internal wave of large amplitude. *Ocean Modelling, 173*, 101996. DOI: 10.1016/J.OCEMOD.2022.101996

Haulsee, D., Blondin, H., Logan, R., & Crowder, L. (2022). Where do the billfish go? Using recreational catch data to relate local and basin scale environmental conditions to billfish occurrence in the Eastern Tropical Pacific. *Fisheries Oceanography*, *31*(2), 135-148. DOI: 10.1111/fog.12567

Hicks, C. C., Gephart, J. A., Koehn, J. Z., Nakayama, S., Payne, H. J., Allison, E. H., Belhbib, D., Cao, L., Cohen, P. J., Fanzo, J., Fluet-Chouinard, E., Gelcich, S., Golden, C. D., & Goros. (2022). Rights and representation support justice across aquatic food systems. *Nature Food, 3*(10), 851-861. DOI: 10.1038/s43016-022-00618-4

Ibarra, D., Yanchilina, A., Lloyd, M., Methner, K., Chamberlain, C., Yam, R., Shemesh, A., & Stolper, D. (2022). Triple oxygen isotope systematics of diagenetic recrystallization of diatom opal-A to opal-CT to microquartz in deep sea sediments. *Geochimica et Cosmochimica Acta*, *320*, 304-323. DOI: 10.1016/J.GCA.2021.11.027

Joy-Warren, H., Alderkamp, A., van Dijken, G., J. Jabre, L., Bertrand, E., Baldonado, E., Glickman, M., Lewis, K., Middag, R., Seyitmuhammedov, K., Lowry, K., van de Poll, W., & Arrigo, K. (2022). Springtime phytoplankton responses to light and iron availability along the western Antarctic Peninsula. *Limnology and Oceanography*, *67*(4), 800-815. DOI: 10.1002/lno.12035

Kahane-Rapport, S., Czapanskiy, M., Fahlbusch, J., Friedlaender, A., Calambokidis, J., Hazen, E., Goldbogen, J., & Savoca, M. (2022). Field measurements reveal exposure risk to microplastic ingestion by filter-feeding megafauna. *Nature Communications*, *13*(1), 1-11. DOI: 10.1038/s41467-022-33334-5

Koeshidayatullah, A., Trower, E., Li, X., Mukerji, T., Lehrmann, D., Morsilli, M., Al-Ramadan, K., & Payne, J. (2022). Quantitative evaluation of the roles of ocean chemistry and climate on ooid size across the Phanerozoic: Global versus local controls. *Sedimentology*, *69*(6), 2486-2506. DOI: 10.1111/sed.12998

Lee, J., Gambi, M., Kroeker, K., Munari, M., Peay, K., & Micheli, F. (2022). Resilient consumers accelerate the plant decomposition in a naturally acidified seagrass ecosystem. *Global Change Biology*, *28*(15), 4558-4576. DOI: 10.1111/gcb.16265

Lee, J., Hughes, B., Kroeker, K., Owens, A., Wong, C., & Micheli, F. (2022). Who wins or loses matters: Strongly interacting consumers drive seagrass resistance under ocean acidification. *Science of The Total Environment, 808,* 151594. DOI: 10.1016/J.SCITOTENV.2021.151594

Lehrmann, D., Stepchinski, L., Wolf, H., Li, L., Li, X., Minzoni, M., Yu, M., & Payne, J. (2022). The role of carbonate factories and sea water chemistry on basin-wide ramp to high-relief carbonate platform evolution: Triassic, Nanpanjiang Basin, South China. *The Depositional Record*, *8*(2), 386-418. DOI: 10.1002/dep2.166

Lim, S., Payne, C., van Dijken, G., & Arrigo, K. (2022). Increases in Arctic sea ice algal habitat, 1985–2018. *Elementa: Science of the Anthropocene*, *10*(1). DOI: 10.1525/ELEMENTA.2022.00008

MacMillan, T., & Ouellette, N. (2022). Lagrangian scale decomposition via the graph Fourier transform. *Physical Review Fluids*, *7*(12), 124401. DOI: 10.1103/PhysRevFluids.7.124401

Marshall, T., Granger, J., Casciotti, K., Dähnke, K., Emeis, K., Marconi, D., McIlvin, M., Noble, A., Saito, M., Sigman, D., & Fawcett, S. (2022). The Angola Gyre is a hotspot of dinitrogen fixation in the South Atlantic Ocean. *Communications Earth & Environment*, *3*(1), 151. DOI: 10.1038/s43247-022-00474-x

Maticka, S., Rogers, J., Woodson, C., Hefner, B., & Monismith, S. (2022). Reef Flat Flow Dynamics for a Nearly Closed Fringing Reef Lagoon: Ofu, American Samoa. *Journal of Geophysical Research: Oceans*, *127*(10), e2022JC018831. DOI: 10.1029/2022JC018831

Mériguet, Z., Oddone, A., Le Guen, D., Pollina, T., Bazile, R., Moulin, C., Troublé, R., Prakash, M., de Vargas, C., & Lombard, F. (2022). Basin-Scale Underway Quantitative Survey of Surface Microplankton Using Affordable Collection and Imaging Tools Deployed From Tara. *Frontiers in Marine Science*, *9*, 1125. DOI: 10.3389/FMARS.2022.916025/BIBTEX

Meyer, N., Parada, A., Kapili, B., Fortney, J., & Dekas, A. (2022). Rates and physicochemical drivers of microbial anabolic activity in deep-sea sediments and implications for deep time. *Environmental microbiology*, *24*(11), 5188-5201. DOI: 10.1111/1462-2920.16183

Mills, D., & Sperling, E. (2022). Marine sponges in the once and future ocean. *Global Change Biology*, *28*(6), 1953-1955. DOI: 10.1111/gcb.16053

Monismith, S., Alnajjar, M., Daly, M., Valle-Levinson, A., Juarez, B., Fagundes, M., Bell, T., & Woodson, C. (2022). Kelp Forest Drag Coefficients Derived from Tidal Flow Data. *Estuaries and Coasts*, *45*, 2492-2503. DOI: 10.1007/s12237-022-01098-2

Monismith, S., Alnajjar, M., Woodson, C., Boch, C., Hernandez, A., Vazquez-Vera, L., Bell, T., & Micheli, F. (2022). Influence of Kelp Forest Biomass on Nearshore Currents. *Journal of Geophysical Research: Oceans*, *127*(7). DOI: 10.1029/2021JC018333

Monreal, P., Kelly, C., Travis, N., & Casciotti, K. (2022). Identifying the Sources and Drivers of Nitrous Oxide Accumulation in the Eddy-Influenced Eastern Tropical North Pacific Oxygen-Deficient Zone. *Global Biogeochemical Cycles*, *36*(6), e2022GB007310. DOI: 10.1029/2022GB007310

Moyen, N., Somero, G., & Denny, M. (2022). Effects of heat acclimation on cardiac function in the intertidal mussel Mytilus californianus: can laboratory-based indices predict survival in the field? *Journal of Experimental Biology*, *255*(9). DOI: 10.1242/JEB.243050/274978/AM/EFFECTS-OF-HEAT-ACCLIMATION-ON-CARDIAC-FUNCTION-IN

Muhling, B., Snyder, S., Hazen, E., Whitlock, R., Dewar, H., Park, J., Stock, C., & Block, B. (2022). Risk and Reward in Foraging Migrations of North Pacific Albacore Determined From Estimates of Energy Intake and Movement Costs. *Frontiers in Marine Science*, *9*, 343. DOI: 10.3389/FMARS.2022.730428/BIBTEX

Nazario, E., Cade, D., Bierlich, K., Czapanskiy, M., Goldbogen, J., Kahane-Rapport, S., Hoop, J., Luis, M., & Friedlaender, A. (2022). Baleen whale inhalation variability revealed using animal-borne video tags. *PeerJ*, *10*, e13724. DOI: 10.7717/PEERJ.13724

Ng, C., & Micheli, F. (2022). Variability in grazing on juvenile giant kelp throughout an upwelling season. *Marine Ecology Progress Series*, *693*, 83-93. DOI: 10.3354/MEPS14083

Nichols, R., Cade, D., Kahane-Rapport, S., Goldbogen, J., Stimpert, A., Nowacek, D., Read, A., Johnston, D., & Friedlaender, A. (2022). Intra-seasonal variation in feeding rates and diel foraging behaviour in a seasonally fasting mammal, the humpback whale. *Royal Society Open Science*, *9*(7). DOI: 10.1098/rsos.211674

Oestreich, W., Abrahms, B., McKenna, M., Goldbogen, J., Crowder, L., & Ryan, J. (2022). Acoustic signature reveals blue whales tune life-history transitions to oceanographic conditions. *Functional Ecology*, *36*(4), 882-895. DOI: 10.1111/1365-2435.14013

Österblom, H., Folke, C., Rocha, J., Bebbington, J., Blasiak, R., Jouffray, J. B., Selig, E. R., Wabnitz, C. C., Bengtsson, F., Crona, B., Gupta, R., Henriksson, P. J., Johansson, K. A., & Merrie. (2022). Scientific mobilization of keystone actors for biosphere stewardship. *Scientific Reports*, *12*(1), 1-17. DOI: 10.1038/s41598-022-07023-8

Ouréns, R., Melnychuk, M., Crowder, L., Gutierrez, N., Hilborn, R., Pita, C., & Defeo, O. (2022). Linking small-scale fisheries performance to governance attributes: A quantitative assessment from stakeholders' perceptions in the Americas and Europe. *Marine Policy*, *136*, 104876. DOI: 10.1016/J.MARPOL.2021.104876

Ouyang, Z., Collins, A., Li, Y., Qi, D., Arrigo, K., Zhuang, Y., Nishino, S., Humphreys, M., Kosugi, N., Murata, A., Kirchman, D., Chen, L., Chen, J., & Cai, W. (2022). Seasonal Water Mass Evolution and Non-Redfield Dynamics Enhance CO2 Uptake in the Chukchi Sea. *Journal of Geophysical Research: Oceans*, *127*(8), e2021JC018326. DOI: 10.1029/2021JC018326

Pallin, L., Bierlich, K., Durban, J., Fearnbach, H., Savenko, O., Baker, C., Bell, E., Double, M., De La Mare, W., Goldbogen, J., Johnston, D., Kellar, N., Nichols, R., Nowacek, D., Read, A., Steel, D., & Friedlaender, A. (2022). Demography of an ice-obligate mysticete in a region of rapid environmental change. *Royal Society Open Science*, *9*(11). DOI: 10.1098/rsos.220724

Pallin, L., Botero-Acosta, N., Steel, D., Baker, C., Casey, C., Costa, D., Goldbogen, J., Johnston, D., Kellar, N., Modest, M., Nichols, R., Roberts, D., Roberts, M., Savenko, O., & Friedlaender, A. (2022). Variation in blubber cortisol levels in a recovering humpback whale population inhabiting a rapidly changing environment. *Scientific Reports*, *12*(1), 1-13. DOI: 10.1038/s41598-022-24704-6

Parada, A., Mayali, X., Weber, P., Wollard, J., Santoro, A., Fuhrman, J., Pett-Ridge, J., & Dekas, A. (2022). Constraining the composition and quantity of organic matter used by abundant marine Thaumarchaeota. *Environmental Microbiology*, *25*(3), 689-704. DOI: 10.1111/1462-2920.16299

Patil, A., & Fringer, O. (2022). Drag enhancement by the addition of weak waves to a wave-current boundary layer over bumpy walls. *Journal of Fluid Mechanics*, *947*, A3. DOI: 10.1017/JFM.2022.628

Phelan, K., Gardner, A., Selig, E., & Sparks, J. (2022). Towards a model of port-based resilience against fisher labour exploitation. *Marine Policy*, *142*, 105108. DOI: 10.1016/J.MARPOL.2022.105108

Pimentel-Galvan, M., Lau, K., Maher, K., Mukerji, T., Lehrmann, D., Altiner, D., & Payne, J. (2022). Duration and Intensity of End-Permian Marine Anoxia. *Geochemistry, Geophysics, Geosystems*, *23*(1), e2021GC010130. DOI: 10.1029/2021GC010130

Pinti, J., Shatley, M., Carlisle, A., Block, B., & Oliver, M. (2022). Using pseudo-absence models to test for environmental selection in marine movement ecology: the importance of sample size and selection strength. *Movement Ecology*, *10*(1), 1-17. DOI: 10.1186/s40462-022-00362-1

Pirotta, E., Booth, C., Calambokidis, J., Costa, D., Fahlbusch, J., Friedlaender, A., Goldbogen, J., Harwood, J., Hazen, E., New, L., Santora, J., Watwood, S., Wertman, C., & Southall, B. (2022). From individual responses to population effects: Integrating a decade of multidisciplinary research on blue whales and sonar. *Animal Conservation*, *25*(6), 796-810. DOI: 10.1111/acv.12785

Pollina, T., Larson, A., Lombard, F., Li, H., Le Guen, D., Colin, S., de Vargas, C., & Prakash, M. (2022). PlanktoScope: Affordable Modular Quantitative Imaging Platform for Citizen Oceanography. *Frontiers in Marine Science*, *9*, 1294. DOI: 10.3389/FMARS.2022.949428/BIBTEX

Portner, E., Benoit-Bird, K., Hazen, E., Waluk, C., Robinson, C., Gómez-Gutiérrez, J., & Gilly, W. (2022). Decline and recovery of pelagic acoustic backscatter following El Niño events in the Gulf of California, Mexico. *Progress in Oceanography*, *206*, 102823. DOI: 10.1016/J.POCEAN.2022.102823

Pourtois, J., Provost, M., Micheli, F., & De Leo, G. (2022). Modelling the effect of habitat and fishing heterogeneity on the performance of a Total Allowable Catch-regulated fishery. *ICES Journal of Marine Science*, *79*(5), 1467-1480. DOI: 10.1093/ICESJMS/FSAC067

Ramírez-Ortiz, G., Balart, E., Reyes-Bonilla, H., Huato-Soberanis, L., Cortés-Fuentes, C., & Micheli, F. (2022). Greater resilience of reef fish assemblages in a no-take reserve compared to multi-use areas of the Gulf of California. *Progress in Oceanography*, *204*, 102794. DOI: 10.1016/J.POCEAN.2022.102794

Rasmussen, A., & Francis, C. (2022). Genome-Resolved Metagenomic Insights into Massive Seasonal Ammonia-Oxidizing Archaea Blooms in San Francisco Bay. *mSystems*, *7*(1). DOI: 10.1128/msystems.01270-21

Reji, L., Cardarelli, E., Boye, K., Bargar, J., & Francis, C. (2022). Diverse ecophysiological adaptations of subsurface Thaumarchaeota in floodplain sediments revealed through genome-resolved metagenomics. *The ISME Journal*, *16*, 1140-1152. DOI: 10.1038/s41396-021-01167-7

Rintoul, M., Courtney, T., Dohner, J., Giddings, S., Kekuewa, S., Mitarai, S., Monismith, S., Pezner, A., & Andersson, A. (2022). The Effects of Light Intensity and Flow Speed on Biogeochemical Variability Within a Fringing Coral Reef in Onna-Son, Okinawa, Japan. J*ournal of Geophysical Research: Oceans*, *127*(12), e2021JC018369. DOI: 10.1029/2021JC018369

Rogers, J., Mayer, F., Davis, K., & Fringer, O. (2022). On Internal Tides Driving Residual Currents and Upwelling on an Island. *Journal of Geophysical Research: Oceans*, *127*(7), e2021JC018261. DOI: 10.1029/2021JC018261

Ryan, J. P., Benoit-Bird, K. J., Oestreich, W. K., Leary, P., Smith, K. B., Waluk, C. M., Cade, D. E., Fahlbusch, J. A., Southall, B. L., Joseph, J. E., Margolina, T., Calambokidis, J., DeVogelaere, A., & Goldbogen. (2022). Oceanic giants dance to atmospheric rhythms: Ephemeral wind-driven resource tracking by blue whales. *Ecology letters*, *25*(11), 2435-2447. DOI: 10.1111/ELE.14116

Salvador, J. J., Kyle, S. V., Salvador, J. J., Micheli, F., White, T. D., Andrzejaczek, S., Arnoldi, N. S., Block, B., Butner, C., Micheli, F., White, T. D., Kyle, S. V., & Alfaro-Shigu. (2022). Emergent research and priorities for shark and ray conservation. E*ndangered Species Research*, *47*, 171-203. DOI: 10.3354/ESR01169

Santos, B., & Wong-Parodi, G. (2022). News coverage of ocean issues and its impacts on public perceptions and conservation information-seeking of sea turtles. *Conservation Science and Practice*, *4*(4), e12650. DOI: 10.1111/csp2.12650

Santos, B., Devereaux, S., Gjerde, K., Chand, K., Martinez, J., & Crowder, L. (2022). The diverse benefits of biodiversity conservation in global ocean areas beyond national jurisdiction. *Frontiers in Marine Science*, *9*, 1644. DOI: 10.3389/FMARS.2022.1001240/BIBTEX

Schutte, A., Madigan, M., Resources, S., Samarkin, V., Joye, S., Schutte, A., Bowles, M., Peters, B., & Casciotti, K. (2022). Abiotic Nitrous Oxide Production From Sediments and Brine of Don Juan Pond, Wright Valley Antarctica, at Mars Analog Temperatures (−40°C). *Geophysical Research Letters*, *49*(3), e2021GL094635. DOI: 10.1029/2021GL094635,

Segre, P. S., Gough, W. T., Roualdes, E. A., Cade, D. E., Czapanskiy, M. F., Fahlbusch, J., Kahane-Rapport, S. R., Oestreich, W. K., Bejder, L., Bierlich, K. C., Burrows, J. A., Calambokidis, J., Chenoweth, E. M., & Di. (2022). Scaling of maneuvering performance in baleen whales: larger whales outperform expectations. *Journal of Experimental Biology*, *225*(5). DOI: 10.1242/JEB.243224/274595

Segre, P., di Clemente, J., Kahane-Rapport, S., Gough, W., Meÿer, M., Lombard, A., Goldbogen, J., & Penry, G. (2022). High-speed chases along the seafloor put Bryde's whales at risk of entanglement. *Conservation Science and Practice*, *4*(5), e12646. DOI: 10.1111/csp2.12646

Selig, E., Nakayama, S., Wabnitz, C., Österblom, H., Spijkers, J., Miller, N., Bebbington, J., & Decker Sparks, J. (2022). Revealing global risks of labor abuse and illegal, unreported, and unregulated fishing. *Nature Communications*, *13*(1), 1-11. DOI: 10.1038/s41467-022-28916-2

Semler, A., Fortney, J., Fulweiler, R., & Dekas, A. (2022). Cold Seeps on the Passive Northern U.S. Atlantic Margin Host Globally Representative Members of the Seep Microbiome with Locally Dominant Strains of Archaea. *Applied and Environmental Microbiology*, *88*(11). DOI: 10.1128/aem.00468-22

Seyitmuhammedov, K., Stirling, C., Reid, M., van Hale, R., Laan, P., Arrigo, K., van Dijken, G., Alderkamp, A., & Middag, R. (2022). The distribution of Fe across the shelf of the Western Antarctic Peninsula at the start of the phytoplankton growing season. *Marine Chemistry*, *238*. DOI: 10.1016/J.MARCHEM.2021.104066

Shaver, E., McLeod, E., Hein, M., Palumbi, S., Quigley, K., Vardi, T., Mumby, P., Smith, D., Montoya-Maya, P., Muller, E., Banaszak, A., McLeod, I., & Wachenfeld, D. (2022). A roadmap to integrating resilience into the practice of coral reef restoration. *Global change biology*, *28*(16), 4751-4764. DOI: 10.1111/GCB.16212

Singh, P., Lu, W., Lu, Z., Jost, A., Lau, K., Bachan, A., van de Schootbrugge, B., & Payne, J. (2022). Reduction in animal abundance and oxygen availability during and after the end-Triassic mass extinction. *Geobiology*, *21*(2), 175-192. DOI: 10.1111/gbi.12533

Smith, A., Aguilar, J., Boch, C., De Leo, G., Hernández-Velasco, A., Houck, S., Martinez, R., Monismith, S., Torre, J., Woodson, C., & Micheli, F. (2022). Rapid recovery of depleted abalone in Isla Natividad, Baja California, Mexico. *Ecosphere*, *13*(3), e4002. DOI: 10.1002/ecs2.4002

Somero, G. (2022). Solutions: how adaptive changes in cellular fluids enable marine life to cope with abiotic stressors. *Marine Life Science & Technology*, *4*, 389-413. DOI: 10.1007/s42995-022-00140-3

Somero, G. (2022). The Goldilocks Principle: A Unifying Perspective on Biochemical Adaptation to Abiotic Stressors in the Sea. *Annual Review of Marine Science*, *14*, 1-23. DOI: 10.1146/annurev-marine-022521-102228

Steyaert, M., Lindhart, M., Khrizman, A., Dunbar, R., Bonsall, M., Mucciarone, D., Ransome, E., Santodomingo, N., Winslade, P., & Head, C. (2022). Remote reef cryptobenthic diversity: Integrating autonomous reef monitoring structures and in situ environmental parameters. *Frontiers in Marine Science*, *9*, 2460. DOI: 10.3389/FMARS.2022.932375/BIBTEX

Sullivan-Stack, J., Aburto-Oropeza, O., Brooks, C. M., Cabral, R. B., Caselle, J. E., Chan, F., Duffy, J. E., Dunn, D. C., Friedlander, A. M., Fulton-Bennett, H. K., Gaines, S. D., Gerber, L. R., & Hines, E. (2022). A Scientific Synthesis of Marine Protected Areas in the United States: Status and Recommendations. *Frontiers in Marine Science*, *9*, 436. DOI: 10.3389/FMARS.2022.849927/BIBTEX

Sumaila, U., Pierruci, A., Oyinlola, M., Cannas, R., Froese, R., Glaser, S., Jacquet, J., Kaiser, B., Issifu, I., Micheli, F., Naylor, R., & Pauly, D. (2022). Aquaculture over-optimism? *Frontiers in Marine Science*, *9*, 2200. DOI: 10.3389/FMARS.2022.984354

Tanimoto, Y., Ouellette, N., & Koseff, J. (2022). On the interaction between oncoming internal waves and a dense gravity current in a two-layer stratification. Journal of Fluid Mechanics, 932. DOI: 10.1017/JFM.2021.1006

Thomas, L., Underwood, J., Rose, N., Fuller, Z., Richards, Z., Dugal, L., Grimaldi, C., Cooke, I., Palumbi, S., & Gilmour, J. (2022). Spatially varying selection between habitats drives physiological shifts and local adaptation in a broadcast spawning coral on a remote atoll in Western Australia. *Science Advances*, *8*(17), 9185. DOI: 10.1126/sciadv.abl9185

Tigchelaar, M., Leape, J., Micheli, F., Allison, E. H., Basurto, X., Bennett, A., Bush, S. R., Cao, L., Cheung, W. W., Crona, B., DeClerck, F., Fanzo, J., Gelcich, S., Gephart, J. A., & Golden. (2022). The vital roles of blue foods in the global food system. *Global Food Security*, *33*, 100637. DOI: 10.1016/J.GFS.2022.100637

Traiger, S., Cohn, B., Panos, D., Daly, M., Hirsh, H., Martone, M., Gutierrez, I., Mucciarone, D., Takeshita, Y., Monismith, S., Dunbar, R., & Nickols, K. (2022). Limited biogeochemical modification of surface waters by kelp forest canopies: Influence of kelp metabolism and site-specific hydrodynamics. *Limnology and Oceanography*, *67*(2), 392-403. DOI: 10.1002/lno.11999

Trower, E., Smith, B., Koeshidayatullah, A., & Payne, J. (2022). Marine Ooid Sizes Record Phanerozoic Seawater Carbonate Chemistry. *Geophysical Research Letters*, *49*(22), e2022GL100800. DOI: 10.1029/2022GL100800

Valdez-Rojas, C., Beas-Luna, R., Lorda, J., Zepeda-Domínguez, J., Montáño-Moctezuma, G., Medellín-Ortíz, A., Torre, J., & Micheli, F. (2022). Using a social-ecological systems perspective to identify context specific actions to build resilience in small scale fisheries in Mexico. *Frontiers in Marine Science*, *9*, 1811. DOI: 10.3389/FMARS.2022.904859/BIBTEX

Valle-Levinson, A., Daly, M., Juarez, B., Tenorio-Fernandez, L., Fagundes, M., Woodson, C., & Monismith, S. (2022). Influence of kelp forests on flow around headlands. *Science of The Total Environment, 825*, 153952. DOI: 10.1016/J.SCITOTENV.2022.153952

Vizcaino, A., Jimenez-espejo, F., Dunbar, R., Mucciarone, D., Garc Ia-alix, A., Neugebauer, I., ARIZTEGUI Vizcaino, D., ıa-Alix, G., & Jimenez-Espejo, F. (2022). Southern Hemisphere Westerly Winds have modulated the formation of laminations in sediments in Lago Fagnano (Tierra del Fuego, Argentina) over the past 6.3 ka. *Boreas*, *52*(1), 124-138. DOI: 10.1111/bor.12600

Vuckovic, D., Tinoco, A., Ling, L., Renicke, C., Pringle, J., & Mitch, W. (2022). Conversion of oxybenzone sunscreen to phototoxic glucoside conjugates by sea anemones and corals. S*cience*, *376*(6593). DOI: 10.1126/science.abn2600

Walker, N., Nestor, V., Golbuu, Y., & Palumbi, S. (2022). Coral bleaching resistance variation is linked to differential mortality and skeletal growth during recovery. *Evolutionary Applications*, *16*(2), 504-517. DOI: 10.1111/eva.13500

Wan, X., Sheng, H., Dai, M., Casciotti, K., Church, M., Zou, W., Liu, L., Shen, H., Zhou, K., Ward, B., & Kao, S. (2022). Epipelagic nitrous oxide production offsets carbon sequestration by the biological pump. *Nature Geoscience*, *16*, 29-36. DOI: 10.1038/s41561-022-01090-2

Whitlock, R., Schallert, R., Stokesbury, M., Castleton, M., & Block, B. (2022). Informing Management of Atlantic Bluefin Tuna Using Telemetry Data. *Frontiers in marine science*, *9*, 771547. DOI: 10.3389/FMARS.2022.771547

Wiernicki, C., Curtis, T., Block, B., Oliver, M., & Carlisle, A. (2022). Assessing the Capacity of Pelagic Sharks to Serve as Ocean Observing Platforms in the Mid-Atlantic Bight and Beyond. *OCEANS 2022, Hampton Roads*, 1-8. DOI: 10.1109/OCEANS47191.2022.9977295

Williams, M., Faiad, S., Claar, D., French, B., Leslie, K., Oven, E., Guerra, A., Micheli, F., Zgliczynski, B., Haupt, A., Sandin, S., & Wood, C. (2022). Life history mediates the association between parasite abundance and geographic features. *Journal of Animal Ecology*, *91*(5), 996-1009. DOI: 10.1111/1365-2656.13693

Woods, H. A., Moran, A. L., Atkinson, D., Audzijonyte, A., Berenbrink, M., Borges, F. O., Burnett, K. G., Burnett, L. E., Coates, C. J., Collin, R., Costa-Paiva, E. M., Duncan, M. I., Ern, R., & Laetz, E. M. (2022). Integrative Approaches to Understanding Organismal Responses to Aquatic Deoxygenation. *The Biological Bulletin*, *243*(2). DOI: 10.1086/722899

Yao, Y., Biegert, E., Vowinckel, B., Köllner, T., Meiburg, E., Balachandar, S., Criddle, C., & Fringer, O. (2022). Particle-resolved simulations of four-way coupled, polydispersed, particle-laden flows. *International Journal for Numerical Methods in Fluids*, *94*(11), 1810-1840. DOI: 10.1002/fld.5128

Yi, Y., & Koseff, J. (2022). Dynamics and energetics underlying mixing efficiency in homogeneous stably stratified turbulence. *Physical Review Fluids*, *7*(8), 084801. DOI: 10.1103/PhysRevFluids.7.084801

Yi, Y., & Koseff, J. (2022). Revised mixing coefficient scaling for sheared stably stratified turbulence. *Journal of Fluid Mech*, *952*, 18. DOI: 10.1017/jfm.2022.904

PUBLIC HEALTH

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Abaluck, J., Kwong, L. H., Styczynski, A., Haque, A., Kabir, M. A., Bates-Jeffery, E., Crawford, E., Benjamin-Chun, J., Raihan, S., Rahman, S., Benhachmi, S., Bintee, N. Z., Winch, P. J., & Hossain, M. (2022). Impact of community masking on COVID-19: A cluster-randomized trial in Bangladesh. *Science*, *375*(6577). DOI: 10.1126/science.abi9069

Agache, I., Sampath, V., Aguilera, J., Akdis, C., Akdis, M., Barry, M., Bouagnon, A., Chinthrajah, S., Collins, W., Dulitzki, C., Erny, B., Gomez, J., Goshua, A., Jutel, M., Kizer, K. W., & Kline, O. (2022). Climate change and global health: A call to more research and more action. *Allergy*, *77*(5), 1389-1407. DOI: 10.1111/all.15229

Aguilera, J., Han, X., Cao, S., Balmes, J., Lurmann, F., Tyner, T., Lutzker, L., Noth, E., Hammond, S. K., Sampath, V., Burt, T., Utz, P. J., Khatri, P., Aghaeepour, N., Maecker, H., Prunicki, M., & Nadeau. (2022). Increases in ambient air pollutants during pregnancy are linked to increases in methylation of IL4, IL10, and IFNɣ. C*linical Epigenetics*, *14*(1), 1-13. DOI: 10.1186/s13148-022-01254-2

Aguilera, J., Han, X., Cao, S., Prunicki, M., Nadeau, K., & Faaaai, P. (2022). Exposure to ambient air pollutants during pregnancy is linked to IL4, IL10, and IFNɣ gene methylation and fewer Th1, Th2, and Th17 cell populations. *Journal of Allergy and Clinical Immunology*, *149*(2), AB139. DOI: 10.1016/J.JACI.2021.12.470

Akdis, C., & Nadeau, K. (2022). Human and planetary health on fire. *Nature Reviews Immunology*, *22*(11), 651-652. DOI: 10.1038/s41577-022-00776-3

Altaf, B., Bianchi, E., Douglas, I., Douglas, K., Byers, B., Paredes, P., Ardoin, N., Markus, H., Murnane, E., Bencharit, L., Landay, J., & Billington, S. (2022). Use of Crowdsourced Online Surveys to Study the Impact of Architectural and Design Choices on Wellbeing. *Frontiers in Sustainable Cities*, *4*, 4. DOI: 10.3389/FRSC.2022.780376/BIBTEX

Aluri, K., Halder, A., Islam, M., Benjamin-Chung, J., Alam, M., Shoab, A., Rahman, M., Unicomb, L., & Luby, S. (2022). The effect of a large-scale water, sanitation and hygiene intervention in Bangladesh on knowledge, behaviour and health: Findings from an endline programme evaluation. *Tropical Medicine & International Health*, *27*(10), 913-924. DOI: 10.1111/tmi.13813

Alvero, R. (2022). The third degree: climate change and reproductive health. *Fertility and Sterility*, *118*(2), 213-214. DOI: 10.1016/j.fertnstert.2022.06.014

American Society of Tropical Medicine and Hygiene (ASTMH) Green Task Force members, Dumre SP, LaBeaud AD, & et al. (2022). Why Climate Action Is Global Health Action. *The American Journal of Tropical Medicine and Hygiene*, *107*(3), 1476-1645. DOI: 10.4269/AJTMH.22-0189

Arthur, R., Horng, L., Bolay, F., Tandanpolie, A., Gilstad, J., Tantum, L., & Luby, S. (2022). Community trust of government and non-governmental organizations during the 2014-16 Ebola epidemic in Liberia. *PLOS Neglected Tropical Diseases*, *16*(1), e0010083. DOI: 10.1371/JOURNAL.PNTD.0010083

Bae, H., Chandy, M., Aguilera, J., Smith, E., Nadeau, K., Wu, J., & Paik, D. (2022). Adverse effects of air pollution-derived fine particulate matter on cardiovascular homeostasis and disease. *Trends in Cardiovascular Medicine*, *32*(8), 487-498. DOI: 10.1016/J.TCM.2021.09.010

Bearer, C., Molloy, E., Tessema, M., Pak-Gorstein, S., Montecillo-Narvaez, D., Darmstadt, G., Sampath, V., Mulkey, S., & Nadeau, K. (2022). Global climate change: the defining issue of our time for our children's health. *Pediatric Research*, 1-2. DOI: 10.1038/s41390-022-02290-7

Becerik-Gerber, B., Lucas, G., Aryal, A., Awada, M., Bergés, M., Billington, S. L., Boric-Lubecke, O., Ghahramani, A., Heydarian, A., Jazizadeh, F., Liu, R., Zhu, R., Marks, F., Roll, S., & Seyedrezaei, M. (2022). Ten questions concerning human-building interaction research for improving the quality of life. *Building and Environment*, *226*, 109681. DOI: 10.1016/J.BUILDENV.2022.109681

Blackmon, K., Evans, R., Fernandes, M., Landon, B., Noel, T., Macpherson, C., Cudjoe, N., Burgen, K., Punch, B., Krystosik, A., Grossi-Soyster, E., LaBeaud, A., & Waechter, R. (2022). Neurodevelopment in normocephalic children with and without prenatal Zika virus exposure. *Archives of Disease in Childhood*, *107*(3), 244-250. DOI: 10.1136/ARCHDISCHILD-2020-321031

Blackmon, L., Waltari, E., Li, H., Byrum, J., Ahyong, V., Oliveira, F., Prakash, M., Manning, J., Tato, C., Pak, J., & Mehta, S. (2022). MultiSero: portable plate reader with on-board analysis for serosurveillance of Dengue infections with multiplex serology. *Proceedings of SPIE BiOS*, *PC11950*. DOI: 10.1117/12.2609138.full

Boehm, A., Hughes, B., Wolfe, M., White, B., Duong, D., & Chan-Herur, V. (2022). Regional Replacement of SARS-CoV-2 Variant Omicron BA.1 with BA.2 as Observed through Wastewater Surveillance. *Environmental Science and Technology Letters*, *9*(6), 575-580. DOI: 10.1021/acs.estlett.2c00266

Brack, W., Barcelo Culleres, D., Boxall, A. B., Budzinski, H., Castiglioni, S., Covaci, A., Dulio, V., Escher, B. I., Fantke, P., Kandie, F., Fatta-Kassinos, D., Hernández, F. J., Hilscherová, K., & Hollender. (2022). One planet: one health. A call to support the initiative on a global science–policy body on chemicals and waste. *Environmental Sciences Europe*, *34*(1), 21. DOI: 10.1186/s12302-022-00602-6

Brown Id, M., Patel Id, P., Nash Id, E., Dikid Id, T., Blanton, C., Forsyth, J., Fontaine, R., Sharma, P., Keithid, J., Babu, B., Vaisakhid, T., Azarudeenid, M., Riramid, B., & Shrivastavaid, A. (2022). Prevalence of elevated blood lead levels and risk factors among children living in Patna, Bihar, India 2020. *PLOS Global Public Health*, *2*(10), e0000743. DOI: 10.1371/JOURNAL.PGPH.0000743

Burke, M., Heft-Neal, S., Li, J., Driscoll, A., Baylis, P., Stigler, M., Weill, J., Burney, J., Wen, J., Childs, M., & Gould, C. (2022). Exposures and behavioural responses to wildfire smoke. *Nature Human Behaviour 2022*, *6*, 1351-1361. DOI: 10.1038/s41562-022-01396-6

Cianciosi, A., Čaval, S., Calaon, D., & Seetah, K. (2022). Integrated Remote Sensing to Assess Disease Control: Evidence from Flat Island Quarantine Station, Mauritius. *Remote Sensing*, *14*(8), 1891. DOI: 10.3390/RS14081891/S1

Claypool, A., Goldhaber-Fiebert, J., & Brandeau, M. (2022). Assessing Interventions That Prevent Multiple Infectious Diseases: Simple Methods for Multidisease Modeling. *Medical Decision Making*, (4), 436-449. DOI: 10.1177/0272989X211033287

Contreras ID, J., Islam, M., Mertens, A., Pickering ID, A., Arnold ID, B., Benjamin-Chung, J., Hubbard ID, A., Rahman, M., Unicomb, L., Luby ID, S., Colford, J., & Ercumen, A. (2022). Evaluation of an on-site sanitation intervention against childhood diarrhea and acute respiratory infection 1 to 3.5 years after implementation: Extended follow-up of a cluster-randomized controlled trial in rural Bangladesh. *PLOS Medicine*, *19*(8), e1004041. DOI: 10.1371/journal.pmed.1004041

Contreras, J. D., Islam, M., Mertens, A., Pickering, A. J., Kwong, L. H., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Alam, M., Sen, D., Islam, S., Rahman, M., Unicomb, L., Luby, S. P., & Colfo. (2022). Influence of community-level sanitation coverage and population density on environmental fecal contamination and child health in a longitudinal cohort in rural Bangladesh. *International Journal of Hygiene and Environmental Health*, *245*, 114031. DOI: 10.1016/J.IJHEH.2022.114031

Couper, L., & Mordecai, E. (2022). Ecological drivers of dog heartworm transmission in California. *Parasites & vectors*, *15*(1), 388. DOI: 10.1186/s13071-022-05526-x

Crary, I., Ardoin, N., & Gardner, C. (2022). Impact of Child Interaction With Food Preparation on Vegetable Preferences: A Farm-Based Education Approach. *Journal of Nutrition Education and Behavior*, *54*(1), 46-55. DOI: 10.1016/J.JNEB.2021.08.009

Crimarco, A., Landry, M., Carter, M., & Gardner, C. (2022). Assessing the effects of alternative plant-based meats v. animal meats on biomarkers of inflammation: a secondary analysis of the SWAP-MEAT randomized crossover trial. *Journal of Nutritional Science*, *11*, e82. DOI: 10.1017/JNS.2022.84

Cromar, K. R., Anenberg, S. C., Balmes, J. R., Fawcett, A. A., Ghazipura, M., Gohlke, J. M., Hashizume, M., Howard, P., Lavigne, E., Levy, K., Madrigano, J., Martinich, J. A., Mordecai, E. A., Rice, M. B., & Saha, S. (2022). Global Health Impacts for Economic Models of Climate Change: A Systematic Review and Meta-Analysis. *Annals of the American Thoracic Society, 19*(7), 1203-1212. DOI: 10.1513/ANNALSATS.202110-1193OC/SUPPL_FILE/DISCLOSURES.PDF

Delgado Vela, J., McClary-Gutierrez, J. S., Al-Faliti, M., Allan, V., Arts, P., Barbero, R., Bell, C., D'Souza, N., Bakker, K., Kaya, D., Gonzalez, R., Harrison, K., Kannoly, S., Keenum, I., & Li, L. (2022). Impact of Disaster Research on the Development of Early Career Researchers: Lessons Learned from the Wastewater Monitoring Pandemic Response Efforts. *Environmental Science and Technology*, *56*(8), 4724-4727.DOI: 10.1021/acs.est.2c01583

Douglas, I. P., Murnane, E. L., Bencharit, L. Z., Altaf, B., Costa, J. M., Yang, J., Ackerson, M., Srivastava, C., Cooper, M., Douglas, K., King, J., Paredes, P. E., Camp, N. P., & Mauriello. (2022). Physical workplaces and human well-being: A mixed-methods study to quantify the effects of materials, windows, and representation on biobehavioral outcomes. *Building and Environment*, 109516. DOI: 10.1016/J.BUILDENV.2022.109516

Ekong, P., Aworh, M., Grossi-Soyster, E., Wungak, Y., Maurice, N., Altamirano, J., Ekong, M., Olugasa, B., Nwosuh, C., Shamaki, D., Faburay, B., & Labeaud, D. (2022). A Retrospective Study of the Seroprevalence of Dengue Virus and Chikungunya Virus Exposures in Nigeria, 2010–2018. *Pathogens 11*(7), 762. DOI: 10.3390/PATHOGENS11070762

Ferreira, M., Fontes, M., Lima, M., Cordeiro, S., Wyatt, N., Lima, H., & Fendorf, S. (2022). Human health risk assessment and geochemical mobility of rare earth elements in Amazon soils. *Science of the Total Environment*, *806*. DOI: 10.1016/J.SCITOTENV.2021.151191

Finkel, M., Temmermann, M., Suleman, F., Barry, M., Salm, M., Binagwaho, A., & Kilmarx, P. (2022). What Do Global Health Practitioners Think about Decolonizing Global Health? *Annals of Global Health*, *88*(1), 61-62. DOI: 10.5334/aogh.3714

Forrester, J., Cao, S., Schaps, D., Liou, R., Patil, A., Stave, C., Sokolow, S., & Leo, G. (2022). Influence of Socioeconomic and Environmental Determinants of Health on Human Infection and Colonization with Antibiotic-Resistant and Antibiotic-Associated Pathogens: A Scoping Review. *Surgical Infections*, *23*(3), 209-225. DOI: 10.1089/sur.2021.348

Forsyth, J., Kempinsky, A., Pitchik, H., Alberts, C., Mutuku, F., Kibe, L., Ardoin, N., & Labeaud, A. (2022). Larval source reduction with a purpose: Designing and evaluating a household- and school-based intervention in coastal Kenya. *PLOS Neglected Tropical Diseases*, *16*(4), e0010199. DOi: 10.1371/JOURNAL.PNTD.0010199

Frank, H., Kruuk, L., Neiman, M., Brosnan, S., Enard, D., & Boyd, S. (2022). Exceptional diversity and selection pressure on coronavirus host receptors in bats compared to other mammals. *Proceedings of the Royal Society B*, *289*(1979). DOI: 10.1098/rspb.2022.0193

Gainor, E., Harris, E., & Labeaud, A. (2022). Uncovering the Burden of Dengue in Africa: Considerations on Magnitude, Misdiagnosis, and Ancestry. *Viruses*, *14*(2), 233. DOI: 10.3390/V14020233

Gao, P., Shen, X., Zhang, X., Jiang, C., Zhang, S., Zhou, X., Schüssler-Fiorenza Rose, S., & Snyder, M. (2022). Precision environmental health monitoring by longitudinal exposome and multi-omics profiling. *Genome Research*, *32*(6), 1199-1214. DOI: 10.1101/GR.276521.121

Garfin, D., Holman, E., Fischhoff, B., Wong-Parodi, G., & Silver, R. (2022). Media exposure, risk perceptions, and fear: Americans' behavioral responses to the Ebola public health crisis. *International Journal of Disaster Risk Reduction*, *77*, 103059. DOI: 10.1016/J.IJDRR.2022.103059

Garfin, D., Thompson, R., Holman, E., Wong-Parodi, G., & Silver, R. (2022). Association Between Repeated Exposure to Hurricanes and Mental Health in a Representative Sample of Florida Residents. *JAMA Network Open*, *5*(6), e2217251-e2217251. DOI: 10.1001/JAMANETWORKOPEN.2022.17251

Gerken, K., LaBeaud, A., Mandi, H., L'Azou Jackson, M., Breugelmans, J., & King, C. (2022). Paving the way for human vaccination against Rift Valley fever virus: A systematic literature review of RVFV epidemiology from 1999 to 2021. *PLOS Neglected Tropical Diseases*, *16*(1), e0009852. DOI: 10.1371/journal.pntd.0009852

Gerken, K., Ndenga, B., Owuor, K., Winter, C., Seetah, K., & LaBeaud, A. (2022). Leveraging livestock movements to urban slaughterhouses for wide-spread Rift Valley fever virus surveillance in Western Kenya. One Health, 15, 100457. DOI: 10.1016/J.ONEHLT.2022.100457

Glover, F., Eisenberg, M., Belladelli, F., Del Giudice, F., Chen, T., Mulloy, E., & Caudle, W. (2022). The association between organophosphate insecticides and blood pressure dysregulation: NHANES 2013–2014. *Environmental Health: A Global Access Science Source*, *21*(1), 1-14. DOI: 10.1186/s12940-022-00887-3

Gonzalez, D., Francis, C., Shaw, G., Cullen, M., Baiocchi, M., & Burke, M. (2022). Upstream oil and gas production and ambient air pollution in California. *Science of The Total Environment*, *806*, 150298.

Goshua, A., Akdis, C., & Nadeau, K. (2022). World Health Organization global air quality guideline recommendations: Executive summary. *Allergy*, *77*(7), 1955-1960. DOI: 10.1111/all.15224

Grewelle, R., Perez-Saez, J., Tycko, J., Namigai, E., Rickards, C., & Leo, G. (2022). Modeling the efficacy of CRISPR gene drive for snail immunity on schistosomiasis control. *PLOS Neglected Tropical Diseases*, *16*(10), e0010894. DOI: 10.1371/journal.pntd.0010894

Guo, Y., Li, X., Luby, S., & Jiang, G. (2022). Vertical outbreak of COVID-19 in high-rise buildings: The role of sewer stacks and prevention measures. *Current Opinion in Environmental Science & Health*, *29*, 100379. DOI: 10.1016/J.COESH.2022.100379

Harryman, I., Hazel, A., & Jones, J. (2022). Simulating the effects of a highly pathogenic virus across rural, peri-urban, and urban Bangladesh poultry worker's social networks. *American Journal of Biological Anthropology*, *177*, 79-80. DOI: 10.1002/ajpa.24514

Hartle, J., Zawadzki, R., Rigdon, J., Lam, J., & Gardner, C. (2022). Development and evaluation of a novel dietary bisphenol A (BPA) exposure risk tool. *BMC Nutrition*, *8*(1), 1-12. DOI: 10.1186/s40795-022-00634-4

Hassard, F., Smith, T., Boehm, A., Nolan, S., O'Mara, O., Di Cesare, M., & Graham, D. (2022). Wastewater surveillance for rapid identification of infectious diseases in prisons. *The Lancet Microbe*, *3*(8), e556-e557. DOI: 10.1016/S2666-5247(22)00154-9

Hazel, A., Davidson, M. C., Rogers, A., Barrie, M. B., Freeman, A., Mbayoh, M., Kamara, M., Blumberg, S., Lietman, T. M., Rutherford, G. W., Jones, J. H., Porco, T. C., Richardson, E. T., & Kelly, J. D. (2022). Social Network Analysis of Ebola Virus Disease During the 2014 Outbreak in Sukudu, Sierra Leone. *Open Forum Infectious Diseases*, *9*(11). DOI: 10.1093/OFID/OFAC593

Heft-Neal, S., Driscoll, A., Yang, W., Shaw, G., & Burke, M. (2022). Associations between wildfire smoke exposure during pregnancy and risk of preterm birth in California. *Environmental Research*, *203*, 111872. DOI: 10.1016/J.ENVRES.2021.111872

Hicks, J., Boswell, M., Althoff, T., Crum, A., Ku, J., Landay, J., Moya, P., Murnane, E., Snyder, M., King, A., & Delp, S. (2022). Leveraging Mobile Technology for Public Health Promotion: A Multidisciplinary Perspective. *Annu Rev Public Health*, *44*(1). DOI: 10.1146/annurev-publhealth-060220-041643

Higuera-Mendieta, D., González, S., Chrisinger, B., Castañeda, N., Rosas, L., Banchoff, A., García, J., Mejía-Cancelado, C., Triana, C., King, A., & Sarmiento, O. (2022). Our Voice in the Ciclovía: exercising recreation and health rights through Citizen Science. *Cities & Health*, *7*(1), 1-15. DOI: 10.1080/23748834.2022.2119815

Horwitz, R., Hayes-Conroy, A., Singer, B., Cullen, M., Badal, K., & Sim, I. (2022). Falling down the biological rabbit hole: Epstein-Barr virus, biography, and multiple sclerosis. *Journal of Clinical Investigation*, *132*(17). DOI: 10.1172/JCI164141

Hughes, B., Duong, D., White, B., Wigginton, K., Chan, E., Wolfe, M., & Boehm, A. (2022). Respiratory Syncytial Virus (RSV) RNA in Wastewater Settled Solids Reflects RSV Clinical Positivity Rates. *Environmental Science & Technology Letters*, *9*(2), 172-178. DOI: 10.1021/acs.estlett.1c00963

Huisman, J. S., Scire, J., Caduff, L., Fernandez-Cassi, X., Ganesanandamoorthy, P., Kull, A., Scheidegger, A., Stachler, E., Boehm, A. B., Hughes, B., Knudson, A., Topol, A., Wigginton, K. R., & Wolfe, M. (2022). Wastewater-Based Estimation of the Effective Reproductive Number of SARS-CoV-2. *Environmental Health Perspectives*, *130*(5). DOI: 10.1289/EHP10050

Jin, L., Pruden, A., Boehm, A., Alvarez, P., Raskin, L., Kohn, T., & Li, X. (2022). Integrating Environmental Dimensions of "One Health" to Combat Antimicrobial Resistance: Essential Research Needs. *Environmental Science and Technology*, *56*(21), 14871-14874. DOI: 10.1021/acs.est.2c01651

Jung, Y., Sampath, V., Prunicki, M., Aguilera, J., Allen, H., LaBeaud, D., Veidis, E., Barry, M., Erny, B., Patel, L., Akdis, C., Akdis, M., & Nadeau, K. (2022). Characterization and regulation of microplastic pollution for protecting planetary and human health. *Environmental Pollution*, *315*. DOI: 10.1016/J.ENVPOL.2022.120442

Kain, M., Skinner, E., Athni, T., Ramirez, A., Mordecai, E., & van den Hurk, A. (2022). Not all mosquitoes are created equal: A synthesis of vector competence experiments reinforces virus associations of Australian mosquitoes. *PLOS Neglected Tropical Diseases*, *16*(10), e0010768. DOI: 10.1371/JOURNAL.PNTD.0010768

Karlsson, O., Okoyo, C., Hopkins, S. R., Jones, I. J., Buck, J. C., Leboa, C., Kwong, L. H., Jacobsen, K., Rickards, C., Lund, A. J., Nova, N., Macdonald, A. J., Lambert-Peck, M., De Leo, G. A., & Sokolow, S. (2022). Environmental Persistence of the World's Most Burdensome Infectious and Parasitic Diseases. *Frontiers in Public Health*, *1*, 892366. DOI: 10.3389/fpubh.2022.892366

Khan, A. I., Ndenga, B. I., Mutuku, F. I., Bosire ID, C. M., Okuta, V., RongaID, C. O., Mutai, N. K., Musaki, S. K., Chebii, P. K., Maina, P. W., Jembe, Z., Amugongo, J. S., Malumbo, S. L., Ng, C. M., & LaBeau. (2022). Majority of pediatric dengue virus infections in Kenya do not meet 2009 WHO criteria for dengue diagnosis. P*LOS Global Public Health*, *2*(4), e0000175. DOI: 10.1371/JOURNAL.PGPH.0000175

Kim, S., Kennedy, L. C., Wolfe, M. K., Criddle, C. S., Duong, D. H., Topol, A., White, B. J., Kantor, R. S., Nelson, K. L., Steele, J. A., Langlois, K., Griffith, J. F., Zimmer-Faust, A. G., & McLellan, S. (2022). SARS-CoV-2 RNA is enriched by orders of magnitude in primary settled solids relative to liquid wastewater at publicly owned treatment works. *Environmental Science: Water Research & Technology*, *8*(4), 757-770. DOI: 10.1039/D1EW00826A

Kim, S., Wolfe, M., Criddle, C., Duong, D., Chan-Herur, V., White, B., & Boehm, A. (2022). Effect of SARS-CoV-2 digital droplet RT-PCR assay sensitivity on COVID-19 wastewater based epidemiology. *PLOS Water*, *1*(11), e0000066.DOI: 10.1371/journal.pwat.0000066

Kirk, D., O'Connor, M., & Mordecai, E. (2022). Scaling effects of temperature on parasitism from individuals to populations. *Journal of Animal Ecology*, *91*(10), 2087-2102. DOI: 10.1111/1365-2656.13786

Kizer, K., Perera, F., & Nadeau, K. (2022, 11). Health implications of the West Virginia v Environmental Protection Agency US Supreme Court decision. *The Lancet Planetary Health*, *6*(11), e847-e848. DOI: 10.1016/S2542-5196(22)00249-2

Lau, S., Bokenkamp, K., Tecza, A., Wagner, E., Plewa, M., & Mitch, W. (2022). Toxicological assessment of potable reuse and conventional drinking waters. *Nature Sustainability*, *6*, 39-46. DOI: 10.1038/s41893-022-00985-7

Li, X., Kulandaivelu, J., Guo, Y., Zhang, S., Shi, J., O'Brien, J., Arora, S., Kumar, M., Sherchan, S., Honda, R., Jackson, G., Luby, S., & Jiang, G. (2022). SARS-CoV-2 shedding sources in wastewater and implications for wastewater-based epidemiology. *Journal of Hazardous Materials*, *432*, 128667. DOI: 10.1021/ACS.EST.2C03241

Lopez, A., Nicolini, C., Aeppli, M., Luby, S., Fendorf, S., & Forsyth, J. (2022). Assessing Analytical Methods for the Rapid Detection of Lead Adulteration in the Global Spice Market. *Environmental Science & Technology*, *56*(23), 16996-17006. DOI: 10.1021/acs.est.2c03241

Lopez-Galvez, N., Claude, J., Wong, P., Bradman, A., Hyland, C., Castorina, R., Canales, R., Billheimer, D., Torabzadeh, E., Leckie, J., & Beamer, P. (2022). Quantification and Analysis of Micro-Level Activities Data from Children Aged 1–12 Years Old for Use in the Assessments of Exposure to Recycled Tire on Turf and Playgrounds. *International Journal of Environmental Research and Public Health*, *19*(4), 2483. DOI: 10.3390/IJERPH19042483/S1

Lunjani, N., Tan, G., Dreher, A., Sokolowska, M., Groeger, D., Warwyzniak, M., Altunbulakli, C., Westermann, P., Basera, W., Hobane, L., Botha, M., Gray, C., Mankahla, A., Gray, C., Nadeau, K. C., & Hle. (2022). Environment-dependent alterations of immune mediators in urban and rural South African children with atopic dermatitis. *Allergy*, *77*(2), 569-581. DOI: 10.1111/all.14974

López-Carr, D., Sokolow, S., De Leo, G., Murray, K., & Barry, M. (2022). Editorial: Planetary health impacts of pandemic coronaviruses. *Frontiers in Public Health*, *10*, 987167. DOI: 10.3389/FPUBH.2022.987167

Maldonado, P., Peng, A., Ouyang, D., Suckale, J., & Ho, D. (2022). Science Translation During the COVID-19 Pandemic: An Academic-Public Health Partnership to Assess Capacity Limits in California. *American Journal of Public Health*, *112*(2), 308-315. DOI: 10.2105/AJPH.2021.306576

McKee, C. D., Islam, A., Rahman, M. Z., Khan, S. U., Rahman, M., Satter, S. M., Islam, A., Yinda, C. K., Epstein, J. H., Daszak, P., Munster, V. J., Hudson, P. J., Plowright, R. K., & Luby, S. (2022). Nipah Virus Detection at Bat Roosts after Spillover Events, Bangladesh, 2012–2019. *Emerging Infectious Diseases, 28*(7), 1384. DOI: 10.3201/EID2807.212614

Mendoza Grijalva, L., Brown, B., Cauble, A., & Tarpeh, W. (2022). Diurnal Variability of SARS-CoV-2 RNA Concentrations in Hourly Grab Samples of Wastewater Influent during Low COVID-19 Incidence. *ACS Environmental Science and Technology Water*, *2*(11), 2125-2133. DOI: 10.1021/acsestwater.2c00061

Migliore, E., Amaitsa, V., Mutuku, F., Malhotra, I., Mukoko, D., Sharma, A., Kalva, P., Kang, A., King, C., & LaBeaud, A. (2022). Dietary Intake and Pneumococcal Vaccine Response Among Children (5–7 Years) in Msambweni Division, Kwale County, Kenya. *Frontiers in Nutrition*, *9*. DOI: 10.3389/FNUT.2022.830294/FULL

Mitch, W. (2022). Tap water and bladder cancer in China. *Nature Sustainability*, *5*(8), 643-644. DOI: 10.1038/s41893-022-00900-0

Ndenga, B., Mutuku, F., Ngugi, H., Mbakaya, J., Mukoko, D., Kitron, U., & LaBeaud, A. (2022). Night Time Extension of Aedes aegypti Human Blood Seeking Activity. *The American Journal of Tropical Medicine and Hygiene*, *107*(1). DOI: 10.4269/ajtmh.21-0309

Nicole GerkenID, K., Maluki MutukuID, F., Alberto NdengaID, B., Adhiambo AgolaID, G., MiglioreID, E., Palacios FabreID, E., Malumbo, S., Nyumbile ShaitaID, K., Mauricio Rezende, I., & Desiree LaBeaudID, A. (2022). Urban risk factors for human Rift Valley fever virus exposure in Kenya. *PLOS Global Public Health*, *2*(7), e0000505. DOI: 10.1371/journal.pgph.0000505

Okop, K., Delobelle, P., Lambert, E., Getachew, H., Howe, R., Kedir, K., Niyibizi, J., Bavuma, C., Kasenda, S., Crampin, A., King, A., Puoane, T., & Levitt, N. (2022). Implementing and Evaluating Community Health Worker-Led Cardiovascular Disease Risk Screening Intervention in Sub-Saharan Africa Communities: A Participatory Implementation Research Protocol. *International Journal of Environmental Research and Public Health*, *20*(1), 298. DOI: 10.3390/IJERPH20010298

Ozretich, R., Wood, C., Allan, F., Koumi, R., Norman, R., Brierley, A., De Leo, G., Little, D., & Koumi, A. (2022). The Potential for Aquaculture to Reduce Poverty and Control Schistosomiasis in Côte d'Ivoire (Ivory Coast) during an Era of Climate Change: A Systematic Review. *Reviews in Fisheries Science & Aquaculture, 30*(4), 467-497. DOI: 10.1080/23308249.2022.2039096

Piscitelli, P., Miani, A., Setti, L., De Gennaro, G., Rodo, X., Artinano, B., Vara, E., Rancan, L., Arias, J., Passarini, F., Barbieri, P., Pallavicini, A., Parente, A., & D'Oro, E. C. (2022). The role of outdoor and indoor air quality in the spread of SARS-CoV-2: Overview and recommendations by the research group on COVID-19 and particulate matter (RESCOP commission). *Environmental Research*, *211*, 113038. DOI: 10.1016/J.ENVRES.2022.113038

Reitzug, F., Luby, S., Pullabhotla, H., & Geldsetzer, P. (2022). The Effect of Particulate Matter Exposure During Pregnancy on Pregnancy and Child Health Outcomes in South Asia: Protocol for an Instrumental Variable Analysis. *JMIR Res Protoc*, *11*(8), e35249. DOI: 10.2196/35249

Roberts, A., Busque, V., Robinson, J., Landry, M., & Gardner, C. (2022). SWAP-MEAT Athlete (study with appetizing plant-food, meat eating alternatives trial) – investigating the impact of three different diets on recreational athletic performance: a randomized crossover trial. *Nutrition Journal, 21*(1), 1-12. DOI: 10.1186/s12937-022-00820-x

Rugh, M. B., Grant, S. B., Hung, W. C., Jay, J. A., Parker, E. A., Feraud, M., Li, D., Avasarala, S., Holden, P. A., Liu, H., Rippy, M. A., Werfhorst, L. C., Kefela, T., Peng, J., & Shao, S. (2022). Highly variable removal of pathogens, antibiotic resistance genes, conventional fecal indicators and human-associated fecal source markers in a pilot-scale stormwater biofilter operated under realistic stormflow conditions. *Water Research*, *219*, 118525. DOI: 10.1016/J.WATRES.2022.118525

Sampath, V., Nadeau, K., Ebi, K., Narvaez, D., Tessema, M., Pak-Gorstein, S., & Darmstadt, G. (2022). Improving planetary health is integral to improving children's health—a call to action. *Pediatric Research*. DOI: 10.1038/s41390-022-02432-x

Searcy, R., & Boehm, A. (2022). Know Before You Go: Data-Driven Beach Water Quality Forecasting. *Environmental Science & Technology*. DOI: 10.1021/acs.est.2c05972

Seetah, K., Moots, H., Pickel, D., Van Cant, M., Cianciosi, A., Mordecai, E., Cullen, M., & Maldonado, Y. (2022). Global Health Needs Modernized Containment Strategies to Prepare for the Next Pandemic. *Frontiers in Public Health*, *10*, 1447. DOI: 10.3389/FPUBH.2022.834451/BIBTEX

Sokolow, S. H., Nova, N., Jones, I. J., Wood, C. L., Lafferty, K. D., Garchitorena, A., Hopkins, S. R., Lund, A. J., MacDonald, A. J., LeBoa, C., Peel, A. J., Mordecai, E. A., Howard, M. E., Buck, J. C., & Lop. (2022). Ecological and socioeconomic factors associated with the human burden of environmentally mediated pathogens: a global analysis. *The Lancet Planetary Health*, *6*(11), e870-e879. DOI: 10.1016/S2542-5196(22)00248-0

Soller, J., Jennings, W., Schoen, M., Boehm, A., Wigginton, K., Gonzalez, R., Graham, K., McBride, G., Kirby, A., & Mattioli, M. (2022). Modeling infection from SARS-CoV-2 wastewater concentrations: promise, limitations, and future directions. *Journal of Water and Health, 20*(8), 1197-1211. DOI: 10.2166/wh.2022.094/89641/Modeling-infection-from-SARS-CoV-2-wastewater

Sultana, F., Unicomb, L., Rahman, M., Ali, S., Southern, D., Yeasmin, D., Sarkar, R., Das, K., Nizame, F., Winch, P., & Luby, S. (2022). Pilot of a Low-Cost Elementary School Handwashing Intervention in Bangladesh: Acceptability, Feasibility, and Potential for Sustainability. *The American Journal of Tropical Medicine and Hygiene*, *106*(1), 239. DOI: 10.4269/AJTMH.20-1335

Swarthout, J., Fuhrmeister, E., Hamzah, L., Harris, A., Ahmed, M., Gurley, E., Satter, S., Boehm, A., & Pickering, A. (2022). Differential Overlap in Human and Animal Fecal Microbiomes and Resistomes in Rural versus Urban Bangladesh. *Applied and Environmental Microbiology, 88*(14), 14. DOI: 10.1128/aem.00759-22

Veidis, E., LaBeaud, A., Phillips, A., & Barry, M. (2022). Tackling the Ubiquity of Plastic Waste for Human and Planetary Health. *The American Journal of Tropical Medicine and Hygiene*, *106*(1), 12. DOI: 10.4269/AJTMH.21-0968

Wolfe, M. K., Duong, D., Bakker, K. M., Ammerman, M., Mortenson, L., Hughes, B., Arts, P., Lauring, A. S., Fitzsimmons, W. J., Bendall, E., Hwang, C. E., Martin, E. T., White, B. J., & Boehm, A. (2022). Wastewater-Based Detection of Two Influenza Outbreaks. *Environmental Science and Technology Letters*, *9*(8), 687-692. DOI: 10.1021/acs.estlett.2c00350

Wolfe, M., Hughes, B., Duong, D., Chan-Herur, V., Wigginton, K., White, B., & Boehm, A. (2022). Detection of SARS-CoV-2 Variants Mu, Beta, Gamma, Lambda, Delta, Alpha, and Omicron in Wastewater Settled Solids Using Mutation-Specific Assays Is Associated with Regional Detection of Variants in Clinical Samples. *Applied and Environmental Microbiology*, *88*(8). DOI: 10.1128/aem.00045-22

Wood, G., Pykett, J., Daw, P., Agyapong-Badu, S., Banchoff, A., King, A., & Stathi, A. (2022). The Role of Urban Environments in Promoting Active and Healthy Aging: A Systematic Scoping Review of Citizen Science Approaches. *Journal of Urban Health*, *99*(3), 427-456. DOI: 10.1007/s11524-022-00622-w

Yu, A., Hughes, B., Wolfe, M., Leon, T., Duong, D., Rabe, A., Kennedy, L., Ravuri, S., White, B., Wigginton, K., Boehm, A., & Vugia, D. (2022). Estimating Relative Abundance of 2 SARS-CoV-2 Variants through Wastewater Surveillance at 2 Large Metropolitan Sites, United States. *Emerging Infectious Diseases*, *28*(5), 940. DOI: 10.3201/EID2805.212488

Zambrana, W., Catoe, D., Coffman, M., Kim, S., Anand, A., Solis, D., Sahoo, M., Pinsky, B., Bhatt, A., Boehm, A., & Wolfe, M. (2022). SARS-CoV-2 RNA and N Antigen Quantification via Wastewater at the Campus Level, Building Cluster Level, and Individual-Building Level. *ACS Environmental Science and Technology Water*, *2*(11), 2025-2033. DOI: 10.1021/acsestwater.2c00050

Zambrana, W., Tong, J., E. Anderson, C., B. Boehm, A., & Wolfe, M. (2022). Quantifying the Viral Reduction Achieved Using Ash and Sand as Handwashing Agents. *The American Journal of Tropical Medicine and Hygiene*, *108*(2), 441-448. DOI: 10.4269/AJTMH.22-0581

Zhang, S., Li, X., Shi, J., Sivakumar, M., Luby, S., O'Brien, J., & Jiang, G. (2022). Analytical performance comparison of four SARS-CoV-2 RT-qPCR primer-probe sets for wastewater samples. *Science of The Total Environment*, *806*, 150572. DOI: 10.1016/J.SCITOTENV.2021.150572

SUSTAINABILITY

IMAGE CREDIT: CHUTTERSNAP

IMAGE CREDIT: CRISTINA TARANTINO

IMAGE CREDIT: PIXABAY

Ai, Y., Xu, J., Gunawardena, H., Zare, R., & Chen, H. (2022). Investigation of Tryptic Protein Digestion in Microdroplets and in Bulk Solution. *Journal of the American Society for Mass Spectrometry*, *33*(7), 1238-1249. DOI: 10.1021/jasms.2c00072

Alisjahbana, I., Ceferino, L., & Kiremidjian, A. (2022). Prioritized reconstruction of healthcare facilities after earthquakes based on recovery of emergency services. *Risk Analysis*. DOI: 10.1111/RISA.14076

Alkhadra, M. A., Su, X., Suss, M. E., Tian, H., Guyes, E. N., Shocron, A. N., Conforti, K. M., De Souza, J. P., Kim, N., Tedesco, M., Khoiruddin, K., Wenten, I. G., Santiago, J. G., Hatton, T. A., & Baz. (2022, 8). Electrochemical Methods for Water Purification, Ion Separations, and Energy Conversion. *Chemical Reviews*, *122*(16), 13547-13635. DOI: 10.1021/acs.chemrev.1c00396

Andrews, A., & Jain, R. (2022). A policy landscape analysis of demand flexibility driven building decarbonization: a case study of New York City, USA. *Energy Proceedings*, 2004-2965. ISSN: 2004-2965.

Andrews, A., & Jain, R. (2022). Beyond Energy Efficiency: A clustering approach to embed demand flexibility into building energy benchmarking. *Applied Energy*, *327*, 119989. DOI: DOI: 10.1016/J.APENERGY.2022.119989

Andrews, A., Roth, J., Jain, R., & Mathieu, J. (2022). Data-Driven Examination of the Impact Energy Efficiency has on Demand Response Capabilities in Institutional Buildings. *ASME Journal of Engineering for Sustainable Buildings and Cities*, *3*(2). DOI: 10.1115/1.4054893

Ardoin, N., Bowers, A., & Gaillard, E. (2022). A systematic mixed studies review of civic engagement outcomes in environmental education. *Environmental Education Research*, *29*(1) 1-26. DOI: 10.1080/13504622.2022.2135688

Ardoin, N., Bowers, A., & Wheaton, M. (2022). Leveraging collective action and environmental literacy to address complex sustainability challenges. *Ambio, 52*, 30-44. DOI: 10.1007/s13280-022-01764-6

Ardoin, N., Bowers, A., Kannan, A., & O'Connor, K. (2022). Positive youth development outcomes and environmental education: a review of research. *International Journal of Adolescence and Youth*, *27*(1), 475-492. DOI: 10.1080/02673843.2022.2147442

Ardoin, N., Bowers, A., Lin, V., & Phukan, I. (2022). Design Thinking as a Catalyst and Support for Sustainability Solutions. *Design Thinking Research*, 325-340. DOI: 10.1007/978-3-031-09297-8_16

Ardoin, N., Gould, R., Wojcik, D., Wyman Roth, N., Biggar, M., & Kelemen, E. (2022). Community listening sessions: an approach for facilitating collective reflection on environmental learning and behavior in everyday life. *Ecosystems and People*, *18*(1), 469-477. DOI: 10.1080/26395916.2022.2101531

Athens, N., & Caers, J. (2022). Stochastic Inversion of Gravity Data Accounting for Structural Uncertainty. *Mathematical Geosciences*, *54*(2), 413-436. DOI: 10.1007/s11004-021-09978-2

Azimi, V., Allam, A., & Onori, S. (2022). Extending Life of Lithium-Ion Battery Systems by Embracing Heterogeneities via an Optimal Control-Based Active Balancing Strategy. *IEEE Transactions on Control Systems Technology*, 1-15. DOI: 10.1109/TCST.2022.3215610

Bai, Y., Luan, P., Bai, Y., Zare, R., & Ge, J. (2022). Enzyme-photo-coupled catalysis in gas-sprayed microdroplets. *Chemical Science*, *13*(28), 8341-8348. DOI: 10.1039/D2SC02791G

Bakker, E., Ward, C., Tarpeh, W., & Wang, Z. (2022). Taking Earth's Pulse with Low-Cost Sensors. *ACS Sensors*, *7*(6), 1613. DOI: 10.1021/acssensors.2c01015

Beamer, K., Tau, T., & Vitousek, P. (2022). Islands and Cultures: How Pacific Islands Provide Paths Toward Sustainability. *Yale University Press*. ISBN 978-0-300-25300-9

Berliner, A. J., Lipsky, I., Ho, D., Hilzinger, J. M., Vengerova, G., Makrygiorgos, G., McNulty, M. J., Yates, K., Averesch, N. J., Cockell, C. S., Wallentine, T., Seefeldt, L. C., Criddle, C. S., & Nandi. (2022). Space bioprocess engineering on the horizon. *Communications Engineering*, *1*, 13 DOI: 10.1038/s44172-022-00012-9

Boso, F., Li, W., Um, K., & Tartakovsky, D. (2022). Impact of Carbon Binder Domain on the Performance of Lithium-metal Batteries. *Journal of The Electrochemical Society*, *169*(10), 100550. DOI: 10.1149/1945-7111/ac9a82

Boyle, D., Kim, S., Oyakhire, S., Vilá, R., Huang, Z., Sayavong, P., Qin, J., Bao, Z., & Cui, Y. (2022). Correlating Kinetics to Cyclability Reveals Thermodynamic Origin of Lithium Anode Morphology in Liquid Electrolytes. *Journal of the American Chemical Society*. DOI: 10.1021/jacs.2c08182

Boyle, D., Li, Y., Pei, A., Vilá, R., Zhang, Z., Sayavong, P., Kim, M., Huang, W., Wang, H., Liu, Y., Xu, R., Sinclair, R., Qin, J., Bao, Z., & Cui, Y. (2022). Resolving Current-Dependent Regimes of Electroplating Mechanisms for Fast Charging Lithium Metal Anodes. *Nano Letters*, *22*(20), 8224-8232. DOI: 10.1021/acs.nanolett.2c02792

Brandić Lipińska, M., Maurer, C., Cadogan, D., Head, J., Dade-Robertson, M., Paulino-Lima, I., Liu, C., Morrow, R., Senesky, D., Theodoridou, M., Rheinstädter, M., Zhang, M., & Rothschild, L. (2022). Biological growth as an alternative approach to on and off-Earth construction. *Frontiers in Built Environment*, *8*. DOI: 10.3389/FBUIL.2022.965145/FULL

Braus, J., Heimlich, J., Ardoin, N., & Clark, C. (2022). Building bridges, not walls: exploring the environmental education ecosystem. *Applied Environmental Education & Communication*, *21*(4), 319-330. DOI: 10.1080/1533015X.2022.2115226

Breyer, C., Khalili, S., Bogdanov, D., Ram, M., Oyewo, A. S., Aghahosseini, A., Gulagi, A., Solomon, A. A., Keiner, D., Lopez, G., Ostergaard, P. A., Lund, H., Mathiesen, B. V., & Jacobson, M. Z. (2022). On the History and Future of 100% Renewable Energy Systems Research. *IEEE Access, 10*, 78176-78218. DOI: 10.1109/ACCESS.2022.3193402

Brophy, J., Magallon, K., Duan, L., Zhong, V., Ramachandran, P., Kniazev, K., & Dinneny, J. (2022). Synthetic genetic circuits as a means of reprogramming plant roots. *Science*, *377*(6607), 747-751. DOI: 10.1126/science.abo4326

Buckley Biggs, N., Shivaram, R., Acuña Lacarieri, E., Varkey, K., Hagan, D., Young, H., & Lambin, E. (2022). Landowner decisions regarding utility-scale solar energy on working lands: a qualitative case study in California. *Environmental Research Communications*, *4*(5), 055010. DOI: 10.1088/2515-7620/ac6fbf

Bunke, S., Chen, X., Machala, M., Azevedo, I., Benson, S., & Tarpeh, W. (2022). Life Cycle Comparison of Battery Recycling and Conventional Material Refining. *ECS Meeting Abstracts*, *MA2022-01*(5), 586. DOI: 10.1149/MA2022-015586mtgabs

Caers, J., Scheidt, C., Yin, Z., Wang, L., Mukerji, T., & House, K. (2022). Efficacy of Information in Mineral Exploration Drilling. *Natural Resources Research*, *31*(3), 1157-1173. DOI: 10.1007/s11053-022-10030-1

Chandra, A., Curti, M., Tiels, K., Lomonova, E., & Tartakovsky, D. (2022). Data-driven sparse discovery of hysteresis models for piezoelectric actuators. *CEFC 2022 - 20th Biennial IEEE Conference on Electromagnetic Field Computation, Proceedings*. DOI: 10.1109/CEFC55061.2022.9940793

Chen, B., Xia, Y., He, R., Sang, H., Zhang, W., Li, J., Chen, L., Wang, P., Guo, S., Yin, Y., Hu, L., Song, M., Liang, Y., Wang, Y., Jiang, G., & Zare, R. (2022). Water–solid contact electrification causes hydrogen peroxide production from hydroxyl radical recombination in sprayed microdroplets. *Proceedings of the National Academy of Sciences*, *119*(32), e2209056119. DOI: 10.1073/pnas.2209056119

Chen, C., & Gorlé, C. (2022). Full-scale validation of CFD simulations of buoyancy-driven ventilation in a three-story office building. *Building and Environment, 221*, 109240. DOI: 10.1016/J.BUILDENV.2022.109240

Chen, C., & Gorlé, C. (2022). Optimal temperature sensor placement in buildings with buoyancy-driven natural ventilation using computational fluid dynamics and uncertainty quantification. *Building and Environment*, *207*, 108496. DOI: 10.1016/J.BUILDENV.2021.108496

Chew, L., Chen, C., & Gorlé, C. (2022). Improving thermal model predictions for naturally ventilated buildings using large eddy simulations. *Building and Environment*, *220*, 109241. DOI: 10.1016/J.BUILDENV.2022.109241

Ciriello, V., & Tartakovsky, D. (2022). Machine learning techniques for applications in sustainability research. *Journal of Machine Learning for Modeling and Computing, 3*(2), v-vi. DOI: 10.1615/JMACHLEARNMODELCOMPUT.2022045267

Dehaibi, N., Liao, T., & MacDonald, E. (2022). Validating Perceived Sustainable Design Features Using a Novel Collage Approach. *Journal of Mechanical Design, Transactions of the ASME*, *144*(3). DOI: 10.1115/1.4052584/1120714

Ehrlich, P., & Ehrlich, A. (2022). Returning to "Normal"? Evolutionary Roots of the Human Prospect. *Bioscience*, *72*(8), 778-788. DOI: 10.1093/BIOSCI/BIAC044

El Dehaibi, N., & MacDonald, E. (2022). Differentiating online products using customer perceptions of sustainability. *Design Science*, *8*, e19. DOI: 10.1017/DSJ.2022.14

El Dehaibi, N., Herrera, A., Rattanakongkham, D., & MacDonald, E. (2022). A Test for Product Design Features Perceived as Sustainable to Drive Online Purchasing Decisions. *Journal of Mechanical Design, Transactions of the ASME*, *144*(11). DOI: 10.1115/1.4054873/1141852

Elmustafa, A., Rozi, E., He, Y., Mai, G., Ermon, S., Burke, M., & Lobell, D. (2022). Understanding Economic Development in Rural Africa Using Satellite Imagery, Building Footprints and Deep Models. *The 30th International Conference on Advances in Geographic Information Systems*, *89*. DOI: 10.1145/3557915.3561025

Fang, J., Gong, B., & Caers, J. (2022). Data-Driven Model Falsification and Uncertainty Quantification for Fractured Reservoirs. *Engineering*, *18*, 116-128. DOI: 10.1016/J.ENG.2022.04.015

Fasolato, S., Allam, A., Li, X., Lee, D., Ko, J., & Onori, S. (2022). Reduced-order model of lithium-iron phosphate battery dynamics: A POD-Galerkin approach. *IEEE Control Systems Letters*, *7*, 1117-1122. DOI: 10.1109/LCSYS.2022.3230083

Fauser, F., Vilarrasa-Blasi, J., Onishi, M., Ramundo, S., Patena, W., Millican, M., Osaki, J., Philp, C., Nemeth, M., Salomé, P. A., Li, X., Wakao, S., Kim, R. G., Kaye, Y., & Grossman, A. (2022). Systematic characterization of gene function in the photosynthetic alga Chlamydomonas reinhardtii. *Nature Genetics*, *54*(5), 705-714. DOI: 10.1038/s41588-022-01052-9

Fueda, K., Takami, R., Minomo, K., Morooka, K., Horie, K., Takehara, M., Yamasaki, S., Saito, T., Shiotsu, H., Ohnuki, T., Law, G., Grambow, B., Ewing, R., & Utsunomiya, S. (2022). Volatilization of B4C control rods in Fukushima Daiichi nuclear reactors during meltdown: B–Li isotopic signatures in cesium-rich microparticles. *Journal of Hazardous Materials*, *428*, 128214. DOI: 10.1016/J.JHAZMAT.2022.128214

Galdi, S., Szczuka, A., Shin, C., Mitch, W., & Luthy, R. (2022). Dissolved Methane Recovery and Trace Contaminant Fate Following Mainstream Anaerobic Treatment of Municipal Wastewater. *ACS ES&T Engineering, 3*(1), 121-130. DOI: 10.1021/acsestengg.2c00256

Gibbs, G., Hawthorne, F., & Brown, G. (2022). Pauling's rules for oxide-based minerals: A re-examination based on quantum mechanical constraints and modern applications of bond-valence theory to Earth materials. *American Mineralogist*, *107*(7), 1219-1248. DOI: 10.2138/AM-2021-7938/XML

Gibbs, G., Hawthorne, F., & Brown, G. (2022). Pauling's rules for oxide-based minerals: A re-examination based on quantum mechanical constraints and modern applications of bond-valence theory to Earth materials. A*merican Mineralogist*, *107*(7), 1219-1248. DOI: 10.2138/am-2021-7938/html

Gibson, L. M., Busch, K. C., Stevenson, K. T., Cutts, B. B., DeMattia, E. A., Aguilar, O. M., Ardoin, N. M., Carrier, S. J., Clark, C. R., Cooper, C. B., Feinstein, N. W., Goodwin, J., Peterson, M. N., & Wh. (2022). What is community-level environmental literacy, and how can we measure it? A report of a convening to conceptualize and operationalize CLEL. *Environmental Education Research*, *28*(10), 1423-1451. DOI: 10.1080/13504622.2022.2067325

Gleason, A. E., Park, S., Rittman, D. R., Ravasio, A., Langenhorst, F., Bolis, R. M., Granados, E., Hok, S., Kroll, T., Sikorski, M., Weng, T. C., Lee, H. J., Nagler, B., Sisson, T., & Xing, Z. (2022). Ultrafast structural response of shock-compressed plagioclase. *Meteoritics & Planetary Science*, *57*(3), 635-643. DOI: 10.1111/maps.13785

Glenk, G., & Reichelstein, S. (2022). Reversible Power-to-Gas systems for energy conversion and storage. *Nature Communications*, *13*(1), 1-10. DOI: 10.1038/s41467-022-29520-0

Glenk, G., & Reichelstein, S. (2022). The economic dynamics of competing power generation sources. *Renewable and Sustainable Energy Reviews, 168*, 112758. DOI: 10.1016/J.RSER.2022.112758

Gong, H., Chen, Y., Chen, S., Xu, C., Yang, Y., Ye, Y., Huang, Z., Ning, R., Cui, Y., & Bao, Z. (2022). Fast-Charging of Hybrid Lithium-Ion/Lithium-Metal Anodes by Nanostructured Hard Carbon Host. *ACS Energy Letters, 7*(12), 4417-4426. DOI: 10.1021/acsenergylett.2c02130

Gong, H., Ilavsky, J., Kuzmenko, I., Chen, S., Yan, H., Cooper, C. B., Chen, G., Chen, Y., Chiong, J. A., Jiang, Y., Lai, J. C., Zheng, Y., Stone, K. H., Huelsenbeck, L., Giri, G., & Tok, J. B. (2022). Formation Mechanism of Flower-like Polyacrylonitrile Particles. *Journal of the American Chemical Society*, *144*(38), 17576-17587. DOI: 10.1021/jacs.2c07032

Gordon, B., Crow, W., Konings, A., Dralle, D., & Harpold, A. (2022). Can We Use the Water Budget to Infer Upland Catchment Behavior? The Role of Data Set Error Estimation and Interbasin Groundwater Flow. *Water Resources Research*, *58*(9), e2021WR030966. DOI: 10.1029/2021WR030966

Hall, T., Scheidt, C., Wang, L., Yin, Z., Mukerji, T., & Caers, J. (2022). Sequential Value of Information for Subsurface Exploration Drilling. *Natural Resources Research*, *31*(5), 2413-2434. DOI: 10.1007/s11053-022-10078-z

Hennessy, E., de Chalendar, J., Benson, S., & Azevedo, I. (2022). Distributional health impacts of electricity imports in the United States. *Environmental Research Letters*, *17*, 064011. DOI: 10.1088/1748-9326/ac6cfa

Herrmann, A., Lenzer, B., Müller, B., Danquah, I., Nadeau, K., Muche-Borowski, C., & Traidl-Hoffmann, C. (2022). Integrating planetary health into clinical guidelines to sustainably transform health care. *The Lancet Planetary Health, 6*(3), e184-e185. DOI: 10.1016/S2542-5196(22)00041-9

Hirsch, K., Wong-Parodi, G., & Statler, A. (2022). Integrating norms into the logic of energy and environmental policymaking. *Energy Research & Social Science*, *93*, 102828. DOI: 10.1016/J.ERSS.2022.102828

Howarth, R., & Jacobson, M. (2022). Reply to comment on "How Green is Blue Hydrogen?". *Energy Science & Engineering*, *10*(7), 1955-1960. DOI: 10.1002/ese3.1154

Huang, Z., Choudhury, S., Paul, N., Thienenkamp, J., Lennartz, P., Gong, H., Müller-Buschbaum, P., Brunklaus, G., Gilles, R., & Bao, Z. (2022). Effects of Polymer Coating Mechanics at Solid-Electrolyte Interphase for Stabilizing Lithium Metal Anodes. *Advanced Energy Materials*, *12*(5), 2103187. DOI: 10.1002/aenm.202103187

Huang, Z., Lai, J.-C., Kong, X., Rajkovic, I., Xiao, X., Celik, H., Yan, H., Gong, H., Rudnicki, P. E., Lin, Y., Ye, Y., Li, Y., Chen, Y., Gao, X., Jiang, Y., Choudhury, S., Qin, J., & Tok, J. (2022). A solvent-anchored non-flammable electrolyte. *Matter*, *6*(2), P445-459. DOI: 10.1016/J.MATT.2022.11.003

Hwang, Y., & Gorlé, C. (2022). Large-Eddy Simulations of Wind-Driven Cross Ventilation, Part 2: Comparison of Ventilation Performance Under Different Ventilation Configurations. *Frontiers in Built Environment*, *8*, 119. DOI: 10.3389/FBUIL.2022.911253/BIBTEX

Jackson, R., Ahlström, A., Hugelius, G., Wang, C., Porporato, A., Ramaswami, A., Roy, J., & Yin, J. (2022). Human well-being and per capita energy use. *Ecosphere*, *13*(4), e3978. DOI: 10.1002/ecs2.3978

Jacobson, M., von Krauland, A., Coughlin, S., Dukas, E., Nelson, A., Palmer, F., & Rasmussen, K. (2022, 8). Low-cost solutions to global warming, air pollution, and energy insecurity for 145 countries. *Energy & Environmental Science*, *15*(8), 3343-3359. DOI: 10.1039/D2EE00722C

Jacobson, M., von Krauland, A., Coughlin, S., Palmer, F., & Smith, M. (2022). Zero air pollution and zero carbon from all energy at low cost and without blackouts in variable weather throughout the U.S. with 100% wind-water-solar and storage. *Renewable Energy*, *184*, 430-442. DOI: 10.1016/J.RENENE.2021.11.067

Jew, A., Druhan, J., Ihme, M., Kovscek, A., Battiato, I., Kaszuba, J., Bargar, J., & Brown, G. (2022). Chemical and Reactive Transport Processes Associated with Hydraulic Fracturing of Unconventional Oil/Gas Shales. *Chemical Reviews*, *122*(9), 9198-9263. DOI: 10.1021/acs.chemrev.1c00504

Karutz, R., Omann, I., Gorelick, S. M., Klassert, C. J., Zozmann, H., Zhu, Y., Kabisch, S., Kindler, A., Figueroa, A. J., Wang, A., Küblböck, K., Grohs, H., Burek, P., Smilovic, M., & Klauer. (2022). Capturing Stakeholders' Challenges of the Food–Water–Energy Nexus—A Participatory Approach for Pune and the Bhima Basin, India. *Sustainability*, *14*(9), 5323. DOI: 10.3390/su14095323

Katalenich, S., & Jacobson, M. (2022). Toward battery electric and hydrogen fuel cell military vehicles for land, air, and sea. *Energy*, *254*, 124355. DOI: 10.1016/J.ENERGY.2022.124355

Kavianipour, M., Mozafari, H., Kamjoo, E., Zockaie, A., Ghamami, M., & Jackson, R. (2022). Effects of electric vehicle adoption for state-wide intercity trips on emission saving and energy consumption. *International Journal of Sustainable Transportation*. DOI: 10.1080/15568318.2022.2119624

Ke, F., Yan, J., Niu, S., Wen, J., Yin, K., Yang, H., Wolf, N., Tzeng, Y., Karunadasa, H., Lee, Y., Mao, W., & Lin, Y. (2022). Cesium-mediated electron redistribution and electron-electron interaction in high-pressure metallic CsPbI3. *Nature Communications*, *13*(1), 1-8. DOI: 10.1038/s41467-022-34786-5

Kim, M. S., Zhang, Z., Rudnicki, P. E., Yu, Z., Wang, J., Wang, H., Oyakhire, S. T., Chen, Y., Kim, S. C., Zhang, W., Boyle, D. T., Kong, X., Xu, R., Huang, Z., Huang, W., Bent, S. F., & Wang, L. W. (2022). Suspension electrolyte with modified Li+ solvation environment for lithium metal batteries. *Nature Materials*, *21*(4), 445-454. DOI: 10.1038/s41563-021-01172-3

Klauer, B., Küblböck, K., Omann, I., Karutz, R., Klassert, C., Zhu, Y., Zozmann, H., Smilovic, M., Talozi, S., Figueroa, A., Grohs, H., Heilemann, J., & Gorelick, S. (2022). Stakeholder Workshops Informing System Modeling—Analyzing the Urban Food–Water–Energy Nexus in Amman, Jordan. *Sustainability*, *14*(19). DOI: 10.3390/su141911984

Koshy, D., Hossain, M., Masuda, R., Yoda, Y., Gee, L., Abiose, K., Gong, H., Davis, R., Seto, M., Gallo, A., Hahn, C., Bajdich, M., Bao, Z., & Jaramillo, T. (2022). Investigation of the Structure of Atomically Dispersed NiNxSites in Ni and N-Doped Carbon Electrocatalysts by 61Ni Mössbauer Spectroscopy and Simulations. *Journal of the American Chemical Society*, *144*(47), 21741-21750. DOI: 10.1021/jacs.2c09825

Krall, L., Macfarlane, A., & Ewing, R. (2022). Nuclear waste from small modular reactors. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(23), e2111833119. DOI: 10.1073/pnas.2111833119

Kuepper, L., Teichgraeber, H., Baumgärtner, N., Bardow, A., & Brandt, A. (2022). Wind data introduce error in time-series reduction for capacity expansion modelling. *Energy*, *256*, 124467. DOI: 10.1016/J.ENERGY.2022.124467

Lan, J., Zhai, P., Nan, S., Xu, L., Niu, J., Tian, C., Li, Z., Li, W., Liu, J., & Ewing, R. (2022). Phase stability of pre-irradiated CeO2 with swift heavy ions under high pressure up to 45 GPa. *Journal of the American Ceramic Society, 105*(4), 2889-2902. DOI: 10.1111/jace.18273

Lee, S., Thiagarajan, R., Subramanian, V., & Onori, S. (2022). Advanced Battery Management Systems: Modeling and Numerical Simulation for Control. *Proceedings of the American Control Conference, 2022-June*, 4403-4414. DOI: 10.23919/ACC53348.2022.9867639

Li, W., & Tartakovsky, D. (2022). Effective Representation of Active Material and Carbon Binder in Porous Electrodes. *Journal of The Electrochemical Society*, *169*(4), 040556. DOI: 10.1149/1945-7111/ac6832

Li, W., Tchelepi, H., Ju, Y., & Tartakovsky, D. (2022). Stability-Guided Strategies to Mitigate Dendritic Growth in Lithium-Metal Batteries. *Journal of The Electrochemical Society*, *169*(6), 060536. DOI: 10.1149/1945-7111/ac7978

Li, Z., & Lepech, M. (2022). Characterization and Modeling of How Environmental Aging Affects Fatigue Damage Evolution in Fiber Reinforced Polymeric Composites. *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE)*, *12*. DOI: 10.1115/IMECE2021-70637

Li, Z., Bosse, A., & Lepech, M. (2022). Net irreversible synergistic effects of environmental deterioration on fatigue and flexure properties of fiber reinforcement composite: A homogenization based model. *Composites Part B: Engineering*, *246*, 110234. DOI: 10.1016/J.COMPOSITESB.2022.110234

Lin, Y., Chen, Y., Yu, Z., Huang, Z., Lai, J., Tok, J., Cui, Y., & Bao, Z. (2022). Reprocessable and Recyclable Polymer Network Electrolytes via Incorporation of Dynamic Covalent Bonds. *Chemistry of Materials*, *34*(5), 2393-2399. DOI: 10.1021/acs.chemmater.1c04396

Ling, B., & Battiato, I. (2022). Module-Fluidics: Building Blocks for Spatio-Temporal Microenvironment Control. *Micromachines*, *13*(5), 774. DOI: 10.3390/MI13050774

Ling, B., Sodwatana, M., Kohli, A., Ross, C., Jew, A., Kovscek, A., & Battiato, I. (2022). Probing multiscale dissolution dynamics in natural rocks through microfluidics and compositional analysis. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(32), e2122520119. DOI: 10.1073/pnas.2122520119

Liu, A. P., Appel, E. A., Ashby, P. D., Baker, B. M., Franco, E., Gu, L., Haynes, K., Joshi, N. S., Kloxin, A. M., Kouwer, P. H., Mittal, J., Morsut, L., Noireaux, V., Parekh, S., Schulman, R., & Tang. (2022). The living interface between synthetic biology and biomaterial design. *Nature Materials*, *21*(4), 390-397. DOI: 10.1038/s41563-022-01231-3

Liu, M., Guo, J., Hoffman, A., Stenlid, J., Tang, M., Corson, E., Stone, K., Abild-Pedersen, F., Bare, S., & Tarpeh, W. (2022). Catalytic Performance and Near-Surface X-ray Characterization of Titanium Hydride Electrodes for the Electrochemical Nitrate Reduction Reaction. *Journal of the American Chemical Society, 144*(13), 5739-5744. DOI: 10.1021/jacs.2c01274

Lu, X., Sato, K., & Horne, R. (2022). Analysis of Tidal Behavior of a Horizontal Well to Determine Reservoir Properties. *SPE Annual Technical Conference and Exhibition*. DOI: 10.2118/210166-MS

Mao, H., & Mao, W. (2022). Geomimicry—Liberating high-pressure research by encapsulation. *Matter and Radiation at Extremes*, *7*(6), 068102. DOI: 10.1063/5.0126898

Mao, W., & Lin, Y. (2022). Making the most of metastability. *Science, 377*(6608), 814-815. DOI: 10.1126/science.add5433

Martin, S., Onori, S., & Rajagopal, R. (2022). Effect of State of Charge Uncertainty on Battery Energy Storage Systems. *IFAC-PapersOnLine, 55*(37), 740-745. DOI: 10.1016/J.IFACOL.2022.11.270

McLellan, C., Siefe, C., Casar, J., Peng, C., Fischer, S., Lay, A., Parakh, A., Ke, F., Gu, X., Mao, W., Chu, S., Goodman, M., & Dionne, J. (2022). Engineering Bright and Mechanosensitive Alkaline-Earth Rare-Earth Upconverting Nanoparticles. *Journal of Physical Chemistry Letters*, *13*(6), 1547-1553. DOI: 10.1021/acs.jpclett.1c03841

Meng, Y., Gnanamani, E., & Zare, R. (2022). Catalyst-Free Decarboxylative Amination of Carboxylic Acids in Water Microdroplets. *Journal of the American Chemical Society*, *145*(1), 32-36. DOI: 10.1021/jacs.2c12236

Meng, Y., Gnanamani, E., & Zare, R. (2022). Direct C(sp3)–N Bond Formation between Toluene and Amine in Water Microdroplets. *Journal of the American Chemical Society*, *144*(43), 19709-19713. DOI: 10.1021/jacs.2c10032

Meraz, J., Abel, A., Clark, D., & Criddle, C. (2022). Biological Conversion of Methane to Bioplastics: Kinetics, Stoichiometry, and Thermodynamic Considerations for Process Optimization. *Chemical Engineering Journal*, *45*(2), 140166. DOI: 10.1016/J.CEJ.2022.140166

Meyfroidt, P., de Bremond, A., Ryan, C. M., Archer, E., Aspinall, R., Chhabra, A., Camara, G., Corbera, E., DeFries, R., Díaz, S., Dong, J., Ellis, E. C., Erb, K. H., Fisher, J. A., Garrett, R. D., & G. (2022). Ten facts about land systems for sustainability. *Proceedings of the National Academy of Sciences of the United States of America*, *119*(7). DOI: 10.1073/pnas.2109217118

Molina, A., Vyas, P., Khlystov, N., Kumar, S., Kothari, A., Deriso, D., Liu, Z., Banavar, S., Flaum, E., & Prakash, M. (2022). Low cost centrifugal melt spinning for distributed manufacturing of non-woven media. *PLOS ONE*, *17*(4), e0264933. DOI: 10.1371/journal.pone.0264933

Moy, K., & Onori, S. (2022). Optimal Control of Microgrid Lithium-ion Energy Storage using Pontryagin's Minimum Principle. *Proceedings of the American Control Conference*, *2022-June*, 5294-5299. DOI: 10.23919/ACC53348.2022.9867603

Nag, S., Dong, Z., Tan, J., Kim, J., Muljadi, E., Lee, K., & Jacobson, M. (2022). Impact of Quaternary Pumped Storage Hydropower on Frequency Response of U.S. Western Interconnection with High Renewable Penetrations. *IEEE Power and Energy Society General Meeting*, *2022-July*. DOI: 10.1109/PESGM48719.2022.9916827

Nakasuga, W., Li, W., Chen, C., Dumitru, T., Skuratov, V., & Ewing, R. (2022). Thermal annealing of fission and ion tracks in epidote. *Physics and Chemistry of Minerals*, *49*(7), 1-9. DOI: 10.1007/s00269-022-01200-x

Natella, D., Onori, S., & Vasca, F. (2022). A co-estimation framework for state of charge and parameters of Lithium-ion battery with robustness to aging and usage conditions. *IEEE Transactions on Industrial Electronics*, *70*(6), 5760-5770. DOI: 10.1109/TIE.2022.3194576

Natella, D., Onori, S., & Vasca, F. (2022). An interlaced strategy for open circuit voltage and capacity estimation for lithium-ion batteries. *2022 IEEE Vehicle Power and Propulsion Conference, VPPC 2022 - Proceedings*. DOI: 10.1109/VPPC55846.2022.10003356

Nathan, S., Asundi, A., Hoffman, A., Hong, J., Zhou, C., Vila, F., Cargnello, M., Bare, S., & Bent, S. (2022). Surface Fe clusters promote syngas reaction to oxygenates on Rh catalysts modified by atomic layer deposition. *Journal of Catalysis*, *414*, 125-136. DOI: 10.1016/j.jcat.2022.08.026

Noël, V., Druhan, J., Gundogar, A., Kovscek, A., Brown, G., & Bargar, J. (2022, 12). Dynamic development of geochemical reaction fronts during hydraulic stimulation of shale. *Applied Geochemistry*, 105542. DOI: 10.1016/J.APGEOCHEM.2022.105542

Nozarijouybari, Z., Allam, A., Onori, S., & Fathy, H. (2022). On the Feasibility of Electrode Concentration Distribution Estimation in Single-Particle Lithium-Ion Battery Models. *IEEE Control Systems Letters*, *7*, 1099-1104. DOI: 10.1109/LCSYS.2022.3231557

Nutkiewicz, A., Mastrucci, A., Rao, N., & Jain, R. (2022). Cool roofs can mitigate cooling energy demand for informal settlement dwellers. *Renewable and Sustainable Energy Reviews, 159*, 112183. DOI: 10.1016/J.RSER.2022.112183

Oyakhire, S., Gong, H., Cui, Y., Bao, Z., & Bent, S. (2022). An X-ray Photoelectron Spectroscopy Primer for Solid Electrolyte Interphase Characterization in Lithium Metal Anodes. *ACS Energy Letters*, *7*(8), 2540-2546. DOI: 10.1021/acsenergylett.2c01227

Oyakhire, S., Zhang, W., Cui, Y., & Bent, S. (2022). Resisting Dendrites in Lithium Batteries, One Pinhole at a Time. *ECS Meeting Abstracts*, *MA2022-02*(1), 91. DOI: 10.1149/MA2022-02191mtgabs

Oyakhire, S., Zhang, W., Shin, A., Xu, R., Boyle, D., Yu, Z., Ye, Y., Yang, Y., Raiford, J., Huang, W., Schneider, J., Cui, Y., & Bent, S. (2022). Electrical resistance of the current collector controls lithium morphology. *Nature Communications*, *13*(1), 1-12. DOI: 10.1038/s41467-022-31507-w

Pandolfi, S., Brown, S., Stubley, P., Higginbotham, A., Bolme, C., Lee, H., Nagler, B., Galtier, E., Sandberg, R., Yang, W., Mao, W., Wark, J., & Gleason, A. (2022). Atomistic deformation mechanism of silicon under laser-driven shock compression. *Nature Communications*, *13*(1), 1-7. DOI: 10.1038/s41467-022-33220-0

Park, S., McNulty, T., & Ewing, R. (2022). Critical metal resources in Democratic People's Republic of Korea. *International Geology Review*. DOI: 10.1080/00206814.2022.2151049

Pawar, G., & Ewing, R. (2022). Recent advances in the global rare-earth supply chain. *MRS Bulletin*, *47*(3), 244-249. DOI: 10.1557/s43577-022-00305-6

Powell, S., Cezar, G., Min, L., Azevedo, I., & Rajagopal, R. (2022). Charging infrastructure access and operation to reduce the grid impacts of deep electric vehicle adoption. *Nature Energy*, *7*, 932-945. DOI: 10.1038/s41560-022-01105-7

Pozzato, G., Allam, A., & Onori, S. (2022). Lithium-ion battery aging dataset based on electric vehicle real-driving profiles. *Data in Brief*, *41*, 107995. DOI: 10.1016/J.DIB.2022.107995

Pozzato, G., Rizzo, D., & Onori, S. (2022). Mean-Value Exergy Modeling of Internal Combustion Engines: Characterization of Feasible Operating Regions. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, *144*(6), 061009. DOI: 10.1115/1.4053945/1137762

Pozzato, G., Takahashi, A., Li, X., Lee, D., Ko, J., & Onori, S. (2022). Addressing the Surface Concentration Discontinuity of the Core-Shell Model for Lithium Iron Phosphate Batteries. *Journal of The Electrochemical Society, 169*(10), 100526. DOI: 10.1149/1945-7111/ac93b7

Pozzato, G., Takahashi, A., Li, X., Lee, D., Ko, J., & Onori, S. (2022). Core-Shell Enhanced Single Particle Model for lithium iron phosphate Batteries: Model Formulation and Analysis of Numerical Solutions. *Journal of The Electrochemical Society, 169*(6), 063510. DOI: 10.1149/1945-7111/ac71d2

Ratledge, N., Cadamuro, G., de la Cuesta, B., Stigler, M., & Burke, M. (2022). Using machine learning to assess the livelihood impact of electricity access. *Nature*, *611*(7936), 491-495. DOI: 10.1038/s41586-022-05322-8

Resasco, J., Abild-Pedersen, F., Hahn, C., Bao, Z., Koper, M., & Jaramillo, T. (2022). Enhancing the connection between computation and experiments in electrocatalysis. *Nature Catalysis, 5*(5), 374-381. DOI: 10.1038/s41929-022-00789-0

Riedl, G., Wallner, G., Pugstaller, R., Säckl, G., & Dauskardt, R. (2022). Methodology for local ageing and damage development characterization of solar glass/encapsulant interfaces under superimposed fatigue stresses and environmental influences. *Solar Energy Materials and Solar Cells*, *248*, 112017. DOI: 10.1016/J.SOLMAT.2022.112017

Sambor, D., Bishop, S., Dotson, A., Aggarwal, S., & Jacobson, M. (2022). Optimizing demand response of a modular water reuse system in a remote Arctic microgrid. *Journal of Cleaner Production*, *346,* 131110. DOI: 10.1016/J.JCLEPRO.2022.131110

Sawe, N., Srirangarajan, T., Sahoo, A., Tang, G., & Knutson, B. (2022). Neural responses clarify how ecolabels promote sustainable purchases. *NeuroImage*, *263*, 119668. DOI: 10.1016/J.NEUROIMAGE.2022.119668

Sherwin, E., Lever, E., & Brandt, A. (2022). Low-Cost Representative Sampling for a Natural Gas Distribution System in Transition. *ACS Omega*, *7*(48), 43973-43980. DOI: 10.1021/acsomega.2c05314

Sherwin, E., Meyer, R., & Azevedo, I. (2022). Limitations of econometric evaluation of nonrandomized residential energy efficiency programs: A case study of Northern California rebate programs. *Environmental Data Science*, *1*. DOI: 10.1017/eds.2021.1

Shi, L., Mach, K., Suh, S., & Brandt, A. (2022). Functionality-based life cycle assessment framework: An information and communication technologies (ICT) product case study. *Journal of Industrial Ecology*, *26*(3), 782-800. DOI: 10.1111/jiec.13240

Singh, H., Kavianipour, M., Soltanpour, A., Fakhrmoosavi, F., Ghamami, M., Zockaie, A., & Jackson, R. (2022). Macro Analysis to Estimate Electric Vehicles Fast-Charging Infrastructure Requirements in Small Urban Areas. *Transportation Research Record: Journal of the Transportation Research Board*, *2676*(11), 446-461. DOI: 10.1177/03611981221093625?journalCode=trra

Smith, N., Georgiou, M., King, A., Tieges, Z., & Chastin, S. (2022). Factors influencing usage of urban blue spaces: A systems-based approach to identify leverage points. *Health & Place*, *73*, 102735. DOI: 10.1016/J.HEALTHPLACE.2021.102735

Song, X., Meng, Y., & Zare, R. (2022). Spraying Water Microdroplets Containing 1,2,3-Triazole Converts Carbon Dioxide into Formic Acid. *Journal of the American Chemical Society*, *144*(37), 16744-16748. DOI: 10.1021/jacs.2c07779

Steinbrugge, G., Haynes, M., Schroeder, D., Scanlan, K., Stark, A., Young, D., Grima, C., Kempf, S., Ng, G., Buhl, D., Voigt, J., Roatsch, T., & Blankenship, D. (2022). Altimetry Measurements from Planetary Radar Sounders and Application to SHARAD on Mars. *IEEE Transactions on Geoscience and Remote Sensing*, *60*. DOI: 10.1109/TGRS.2021.3134638

Su, L., Nie, T., On Ho, C., Yang, Z., Calvez, P., Jain, R., & Donat, R. (2022). Optimizing pipe network design and central plant positioning of district heating and cooling System: A Graph-Based Multi-Objective genetic algorithm approach. *Applied Energy*, *325*, 119844. DOI: 10.1016/J.APENERGY.2022.119844

Tan, H., Wong-Parodi, G., Zhang, S., & Xu, J. (2022). Public risk perceptions of shale gas development: A comprehensive review. *Energy Research & Social Science*, *89*, 102548. DOI: 10.1016/J.ERSS.2022.102548

Teichgraeber, H., & Brandt, A. (2022). Time-series aggregation for the optimization of energy systems: Goals, challenges, approaches, and opportunities. *Renewable and Sustainable Energy Reviews*, *157*, 111984. DOI: 10.1016/J.RSER.2021.111984

Turner, M., Moya, C., Smaldino, P., & Jones, J. (2022). How environmental uncertainty and correlated payoffs drive the evolution of social learning. *American Journal of Biological Anthropology*, *177*, 186-187.

Turner, M., Moya, C., Smaldino, P., Jones, J., Turner, M., Moya, C., Smaldino, P., & Jones, J. (2022). Some forms of uncertainty may suppress the evolution of social learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, *44*. https://escholarship.org/uc/item/97q8w74p

Von Wald, G., Sundar, K., Sherwin, E., Zlotnik, A., & Brandt, A. (2022). Optimal gas-electric energy system decarbonization planning. *Advances in Applied Energy*, *6*, 100086. DOI: 10.1016/J.ADAPEN.2022.100086

Wörner, A., Tiefenbeck, V., Wortmann, F., Meeuw, A., Ableitner, L., Fleisch, E., & Azevedo, I. (2022). Bidding on a Peer-to-Peer Energy Market: An Exploratory Field Study. *Information Systems Research*, *33*(3), 794-808. DOI: 10.1287/isre.2021.1098

Wang, H., Yu, Z., Kong, X., Kim, S., Boyle, D., Qin, J., Bao, Z., & Cui, Y. (2022). Liquid electrolyte: The nexus of practical lithium metal batteries. *Joule*, *6*(3), 588-616. DOI: 10.1016/J.JOULE.2021.12.018

Weber, R., Korneev, S., & Battiato, I. (2022). Homogenization-Informed Convolutional Neural Networks for Estimation of Li-ion Battery Effective Properties. *Transport in Porous Media*, *145*(2), 527-548. DOI: 10.1007/s11242-022-01862-9

Whiston, M., Lima Azevedo, I., Litster, S., Samaras, C., Whitefoot, K., & Whitacre, J. (2022). Expert elicitation on paths to advance fuel cell electric vehicles. *Energy Policy*, *160*, 112671. DOI: 10.1016/J.ENPOL.2021.112671

Whitmore, A., Samaras, C., Hendrickson, C., Matthews, H., & Wong-Parodi, G. (2022). Integrating public transportation and shared autonomous mobility for equitable transit coverage: A cost-efficiency analysis. *Transportation Research Interdisciplinary Perspectives*, *14*, 100571. DOI: 10.1016/j.trip.2022.100571

Whitmore, A., Samaras, C., Matthews, H., & Wong-Parodi, G. (2022). Engineers' Roles and Responsibilities in Automated Vehicle Ethics: Exploring Engineering Codes of Ethics as a Guide to Addressing Issues in Sociotechnical Systems. J*ournal of Transportation Engineering, Part A: Systems*, *148*(6), 04022025. DOI: 10.1061/JTEPBS.0000668

Wolf, N., Jaffe, A., Slavney, A., Mao, W., Leppert, L., & Karunadasa, H. (2022). Tuning Defects in a Halide Double Perovskite with Pressure. *Journal of the American Chemical Society*, *144*(45), 20763-20772. DOI: 10.1021/jacs.2c08607

Woo, S.-G., Sewell, H., & Criddle, C. (2022). Phylogenetic diversity of NO reductases, new tools for nor monitoring, and insights into N 2 O production in natural and engineered environments. *Frontiers of Environmental Science & Engineering*, *16*, 127. DOI: 10.1007/s11783-022-1562-3

Wu, Y., Schneider, S., Yuan, Y., Young, R. M., Francese, T., Mansoor, I. F., Dudenas, P. J., Lei, Y., Gomez, E. D., DeLongchamp, D. M., Lipke, M. C., Galli, G., Wasielewski, M. R., Asbury, J. B., & Toney, M. (2022). Twisted A-D-A Type Acceptors with Thermally-Activated Delayed Crystallization Behavior for Efficient Nonfullerene Organic Solar Cells. *Advanced Energy Materials, 12*(18), 2103957. DOI: 10.1002/aenm.202103957

Yao, Y., Kuang, X., Gorelick, S., Scanlon, B., Lancia, M., Andrews, C., Wang, X., Ni, J., Wang, Y., & Zheng, C. (2022). The China groundwater crisis: A mechanistic analysis with implications for global sustainability. *Sustainable Horizons*, *4*. DOI: 10.1016/j.horiz.2022.100042

Yin, Z., Amaru, M., Wang, Y., Li, L., & Caers, J. (2022). Quantifying Uncertainty in Downscaling of Seismic Data to High-Resolution 3-D Lithological Models. I*EEE Transactions on Geoscience and Remote Sensing*, *60*. DOI: 10.1109/TGRS.2022.3153934

Yu, W., Yu, Z., Cui, Y., & Bao, Z. (2022). Degradation and Speciation of Li Salts during XPS Analysis for Battery Research. *ACS Energy Letters*, *7*(10), 3270-3275. DOI: 10.1021/acsenergylett.2c01587

Yu, Z., Rudnicki, P. E., Zhang, Z., Huang, Z., Celik, H., Oyakhire, S. T., Chen, Y., Kong, X., Kim, S. C., Xiao, X., Wang, H., Zheng, Y., Kamat, G. A., Kim, M. S., Bent, S. F., Qin, J., Cui, Y., & Bao, Z. (2022). Rational solvent molecule tuning for high-performance lithium metal battery electrolytes. *Nature Energy*, *7*(1), 94-106. DOI: 10.1038/s41560-021-00962-y

Yu, Z., Seo, S., Song, J., Zhang, Z., Oyakhire, S., Wang, Y., Xu, R., Gong, H., Zhang, S., Zheng, Y., Tsao, Y., Mondonico, L., Lomeli, E., Wang, X., Kim, W., Ryu, K., & Bao, Z. (2022). A Solution-Processable High-Modulus Crystalline Artificial Solid Electrolyte Interphase for Practical Lithium Metal Batteries. *Advanced Energy Materials*, *12*(30), 2201025. DOI: 10.1002/aenm.202201025

Yu, Z., Yu, W., Chen, Y., Mondonico, L., Xiao, X., Zheng, Y., Liu, F., Hung, S., Cui, Y., & Bao, Z. (2022). Tuning Fluorination of Linear Carbonate for Lithium-Ion Batteries. *Journal of The Electrochemical Society*, *169*(4), 040555. DOI: 10.1149/1945-7111/ac67f5

Zeng, Z., Wen, J., Lou, H., Zhang, X., Yang, L., Tan, L., Cheng, B., Zuo, X., Yang, W., Mao, W., Mao, H., & Zeng, Q. (2022). Preservation of high-pressure volatiles in nanostructured diamond capsules. *Nature*, *608*(7923), 513-517. DOI: 10.1038/s41586-022-04955-z

Zhang, Z., Li, Y., Xu, R., Zhou, W., Li, Y., Oyakhire, S., Wu, Y., Xu, J., Wang, H., Yu, Z., Boyle, D., Huang, W., Ye, Y., Chen, H., Wan, J., Bao, Z., Chiu, W., & Cui, Y. (2022). Capturing the swelling of solid-electrolyte interphase in lithium metal batteries. *Science*, *375*(6576), 66-70. DOI: 10.1126/science.abi8703

Zhao, Y., Mamrol, N., Tarpeh, W., Yang, X., Gao, C., & Van der Bruggen, B. (2022). Advanced ion transfer materials in electro-driven membrane processes for sustainable ion-resource extraction and recovery. *Progress in Materials Science*, *128*, 100958. DOI: 10.1016/J.PMATSCI.2022.100958

Zhou, J., Peng, Y., Xu, J., Wu, Y., Huang, Z., Xiao, X., & Cui, Y. (2022). Vacuum insulation arrays as damage-resilient thermal superinsulation materials for energy saving. *Joule*, *6*(10), 2358-2371. DOI: 10.1016/J.JOULE.2022.07.015

Zhu, Z., Jiang, T., Ali, M., Meng, Y., Jin, Y., Cui, Y., & Chen, W. (2022). Rechargeable Batteries for Grid Scale Energy Storage. *Chemical Reviews*, *122*(22), 16610-16751. DOI: 10.1021/acs.chemrev.2c00289

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