

# KYLE FRANKEL DAVIS

*Assistant Professor*

Department of Geography and Spatial Sciences

Department of Plant and Soil Sciences

University of Delaware

kfdavis@udel.edu

## EDUCATION

---

- May 2016                      University of Virginia  
**PhD, Environmental Sciences (Concentration: Hydrology)**  
Advisor: Paolo D'Odorico
- May 2010                      University of Delaware  
**BS, Biochemistry (honors)**

## APPOINTMENTS

---

- 2019-                              Assistant Professor of Environmental Data Science  
University of Delaware
- 2018-2019                      Data Science Institute Fellow  
Columbia University  
Mentors: Ruth DeFries and Michael Puma
- 2016-2018                      Earth Institute Postdoctoral Fellow  
Columbia University  
Mentor: Ruth DeFries
- 2016-2018                      NatureNet Science Fellow  
The Nature Conservancy  
Mentors: Ruth DeFries, Brian Richter, and Joe Fargione

## PUBLICATIONS

---

### Peer-Reviewed Journal Articles

\* indicates lab group member

2021    **Wei D\***, **Davis KF** (2021) Culturally appropriate shifts in staple grain consumption can improve multiple sustainability outcomes. *Environmental Research Letters* **16**, 125006.

Singh D, Karambelas A, Chhatre A, DeFries R, Kinney P, **Davis KF** (2021) A systems lens to evaluate the compound human health impacts of anthropogenic activities. *One Earth* **4**, 1233-1247.

- Zhang X, Yao G, Vishwakarma S, Dalin C, Komarek AM, Kanter DR, **Davis KF**, Pfeifer K, Zhao J, Zou T, D’Odorico P, Folberth C, Rodriguez FG, Fanzo J, Rosa L, Dennison W, Musumba M, Heyman A, Davidson EA (2021) Quantitative assessment of agricultural sustainability reveals divergent priorities among nations. *One Earth* **4**, 1262-1277.
- Yang X, Steenhuis TS, **Davis KF**, Van der Werf W, Ritsema CJ, Pacenka S, Zhang F, Siddique K, Du T (2021) Diversified crop rotations enhance groundwater and economic sustainability of food production. *Food and Energy Security* **10**, e311.
- Srinivasan U, Velho N, Lee JSH, Chiarelli DD, **Davis KF**, Wilcove DS (2021) Expanding oil palm cultivation in India while sparing biodiversity. *Nature Food* **2**, 442-447.
- Ali T, Xie W, Zhu A, **Davis KF** (2021) Accounting for re-exports substantially reduces China’s virtual water demand through agricultural trade. *Environmental Research Letters* **16**, 045002.
- Müller MF, Penny G, Niles MT, Ricciardi V, Chiarelli DD, **Davis KF**, Dell’Angelo J, D’Odorico P, Rosa L, Rulli MC, Mueller ND (2021) Impact of transnational land acquisitions on local food security and dietary diversity. *Proceedings of the National Academy of Sciences USA* **118**, e2020535118.
- Davis KF**, Downs S, Gephart JA (2021) Towards food supply chain resilience to environmental shocks. *Nature Food* **2**, 54–65.
- 2020 Chiarelli DD, D’Odorico P, **Davis KF**, Rosso R, Rulli MC (2020) Large-scale land acquisition as a potential driver of slope instability. *Land Degradation and Development* **32**, 1773-1785.
- Kehoe K, dos Reis TNP, Meyfroidt P, Bager S, Seppelt R, Kuemmerle T, Berenguer E, Clark M, **Davis KF**, zu Ermgassen EKHJ, Farrell KN, Friis C, Haberl H, Kastner T, Murtough KL, Persson UM, Romero-Muñoz A, O’Connell C, Schäfer VV, Virah-Sawmy M, le Polain de Waroux Y, Kiesecker J (2020) Inclusion, transparency, and enforcement: How the EU-Mercosur Trade Agreement fails the sustainability test. *One Earth* **3**, 268-272.
- Damerau K, **Davis KF**, Godde C, Herrero M, Springmann M, Bhupathiraju S, Myers S, Willett W (2020) India has natural resource capacity to achieve nutrition security, reduce health risks and improve environmental sustainability. *Nature Food* **1**, 631-639.
- Chiarelli DD, Passera C, Rosa L, **Davis KF**, D’Odorico P, Rulli MC (2020) The green and blue crop water requirement WATNEEDS model and its global gridded outputs. *Scientific Data* **7**, 273.
- Marston L, Lamsal G, Ancona Z, Caldwell P, Richter B, Ruddell B, Rushforth R, **Davis KF** (2020) Reducing water scarcity by improving water productivity in the United States. *Environmental Research Letters* **15**, 094033.
- Davis KF**, **Koo HI\***, Dell’Angelo J, D’Odorico P, Estes L, Kehoe LJ, Kharratzadeh M, Kuemmerle T, Machava D, Pais AJR, Ribeiro N, Rulli MC, Tatlhego M (2020) Tropical forest loss enhanced by large-scale land acquisitions. *Nature Geoscience* **13**, 482–488.

- Richter BD, Bartak D, Caldwell P, **Davis KF**, Debaere P, Hoekstra AY, Li T, Marston L, McManamay R, Mekonnen MM, Ruddell B, Rushforth RR, Troy TJ (2020) Water scarcity and fish imperilment driven by beef production. *Nature Sustainability* **3**, 319-328.
- 2019 **Davis KF**, Chhatre A, Rao ND, Singh D, Ghosh-Jerath S, Mridul A, Poblete-Cazenave M, Pradhan N, DeFries R (2019) Assessing the sustainability of post-Green Revolution cereals in India. *Proceedings of the National Academy of Sciences USA* **116**, 25034-25041.
- Davis KF**, Chhatre A, Rao ND, Singh D, DeFries RS (2019) Sensitivity of grain yields to historical climate variability in India. *Environmental Research Letters* **14**, 064013.
- Rulli MC, Casirati S, Dell'Angelo J, **Davis KF**, Passera C, D'Odorico P (2019) Interdependencies and telecoupling of oil palm expansion at the expense of Indonesian rainforest. *Renewable and Sustainable Energy Reviews* **105**, 499-512.
- D'Odorico P, Carr JA, **Davis KF**, Dell'Angelo J, Seekell DA (2019) Food inequality, injustice, and rights. *BioScience* **69**, 180-190.
- Rao ND, Poblete-Cazenave M, Bhalerao R, **Davis KF**, Parkinson S (2019) Spatial analysis of energy use and GHG emissions from cereal production in India. *Science of the Total Environment* **654**, 841-849.
- 2018 Rosa L, Rulli MC, **Davis KF**, Chiarelli DD, Passera C, D'Odorico P (2018) Closing the yield gap while ensuring water sustainability. *Environmental Research Letters* **13**, 104002.
- DeFries R, Chhatre A, **Davis KF**, Dutta A, Fanzo J, Ghosh-Jerath S, Myers S, Rao N, Smith M (2018) Impact of historical changes in coarse cereals consumption in India on micronutrient intake and anemia prevalence. *Food and Nutrition Bulletin* **39**, 377-392.
- Davis KF**, Chiarelli DD, Rulli MC, Chhatre A, Richter B, Singh D, DeFries R (2018) Alternative cereals can improve water use and nutrient supply in India. *Science Advances* **4**, eaao1108.
- Davis KF**, Bhattachan A, Suweis S, D'Odorico P (2018) A universal model for predicting human migration under climate change: Examining future sea level rise in Bangladesh. *Environmental Research Letters* **13**, 064030.
- D'Odorico P, **Davis KF**, Rosa L, Carr JA, Chiarelli DD, Dell'Angelo J, Gephart JA, MacDonald GK, Seekell DA, Suweis S, Rulli MC (2018) The global food-energy-water nexus. *Reviews of Geophysics* **56**, 456–531.
- Rosa L, Rulli MC, **Davis KF**, D'Odorico P (2018) The water-energy nexus of hydraulic fracturing: a global hydrologic analysis for shale oil and gas extraction. *Earth's Future* **6**, 745–756.

- Chang X, DeFries RS, **Davis KF**, Liu L (2018) Understanding dietary and staple food transitions in China from multiple scales. *PLoS ONE* **13**, e0195775.
- 2017 **Davis KF**, Rulli MC, Seveso A, D’Odorico P (2017) Increased food production and reduced water use through optimized crop distribution. *Nature Geoscience* **10**, 919–924.
- D’Odorico P, Rulli MC, Dell’Angelo J, **Davis KF** (2017) New frontiers of land and water commodification: socio-environmental controversies of large-scale land acquisitions. *Land Degradation and Development* **28**, 2234-2244.
- Laso-Bayas J-C, *et al.* including **Davis KF** (2017) A global reference database of crowdsourced cropland data collected using the Geo-Wiki platform. *Scientific Data* **4**, 170136.
- D’Odorico P, Natyzak JL, Castner EA, **Davis KF**, Emery K, Gephart JA, Leach AM, Pace ML, Galloway JN (2017) Ancient water supports today’s energy needs. *Earth’s Future* **5**, 515-519.
- Davis KF**, Seveso A, Rulli MC, D’Odorico P (2017) Water savings of crop redistribution in the United States. *Water* **9**, 83.
- Rosa L, **Davis KF**, Rulli MC, D’Odorico P (2017) Environmental consequences of oil production from oil sands. *Earth’s Future* **5**, 158-170.
- Davis KF**, Rulli MC, Garrassino F, Chiarelli D, Seveso A, D’Odorico P (2017) Water limits to closing yield gaps. *Advances in Water Resources* **99**, 67-75.
- 2016 Chiarelli DD, **Davis KF**, Rulli MC, D’Odorico P (2016) Climate change and Large-Scale Land Acquisitions in Africa: Quantifying the future impact on acquired water resources. *Advances in Water Resources* **94**, 231-237.
- Davis KF**, Gephart JA, Emery K, Leach A, Galloway JN, D’Odorico P (2016) Meeting future food demand with current agricultural resources. *Global Environmental Change* **39**, 125-132.
- Chiarelli DD, **Davis KF**, Rulli MC, D’Odorico P (2016) Global change in Africa: Climate change and large scale land acquisition. *Rivista Internazionale di Scienze Sociali* **131**, 463-472.
- Leach AM, Emery KA, **Davis KF**, Gephart JA, Carr JA, Pace ML, D’Odorico P, Galloway JN (2016) Environmental impact food labels combining carbon, nitrogen, and water footprints. *Food Policy* **61**, 213-223.
- Gephart JA, **Davis KF**, Emery K, Leach A, Galloway JN, D’Odorico P, Pace ML (2016) The environmental cost of subsistence: Optimizing diets to minimize footprints. *Science of the Total Environment* **553**, 120-127.

- 2015 **Davis KF**, Gephart JA, Gunda T (2015) Sustaining the food self-sufficiency of a nation: the case of Sri Lankan rice production and its environmental impacts. *Ambio* **45**, 302-312.
- Davis KF**, Yu K, D’Odorico P, Carr JA, Herrero M, Havlik P (2015) Historical trade-offs of livestock’s environmental impacts. *Environmental Research Letters* **10**, 125013.
- Davis KF**, Yu K, Rulli MC, Pichdara L, D’Odorico P (2015) Accelerated deforestation driven by large-scale land acquisitions in Cambodia. *Nature Geoscience* **8**, 772–775.
- Davis KF**, D’Odorico P (2015) Livestock intensification and the influence of dietary change: A calorie-based assessment of competition for crop production. *Science of the Total Environment* **538**, 817-823.
- Davis KF**, Rulli MC, D’Odorico P (2015) The global land rush and climate change. *Earth’s Future* **3**, 298-311.
- 2014 **Davis KF**, D’Odorico P, Rulli MC (2014) Moderating diets to feed the future. *Earth’s Future* **2**, 559-565.
- Davis KF**, D’Odorico P, Rulli MC (2014) Land grabbing: A preliminary quantification of economic impacts on rural livelihoods. *Population and Environment* **36**, 180-192.
- Debaere P, Richter BD, **Davis KF**, Duvall MS, Gephart JA, O’Bannan CE, Pelnik C, Powell EM, Smith TW (2014) Water markets as a response to scarcity. *Water Policy* **16**, 625-649.
- 2013 **Davis KF**, D’Odorico P, Laio F, Ridolfi L (2013) Global spatio-temporal patterns in human migration: A complex network perspective. *PLOS ONE* **8**, e53723.
- D’Odorico P, Bhattachan A, **Davis KF**, Ravi S, Runyan CW (2013) Global desertification: Drivers and feedbacks. *Advances in Water Resources* **51**, 326–344.

### Book Chapters

- 2019 Vico G, **Davis KF** (2019) Ecohydrology of Agroecosystems: Interactions Between Global and Local Processes. In D’Odorico P, Porporato A, Runyan C (Eds.) *Dryland Ecohydrology (2019 Revision)* (Springer, Dordrecht).
- Davis KF**, Olayide OE (2019) A Multidimensional Framework for Achieving Sustainable and Resilient Food Systems in Nigeria. In Filho WL, Ayal D (Eds.) *Handbook of Climate Change Resilience* (Springer, Dordrecht).
- 2018 **Davis KF**, Dalin C, DeFries R, Galloway JN, Leach AM, Mueller ND (2018) Sustainable Pathways for Meeting Future Food Demand. In Anderson J, Berry E, Birner R, Ferranti P, Galli A, Grace D, Hefferon KL, Serra-Majem L, Singer P (Eds.) *Encyclopedia of Food Security and Sustainability* (Elsevier, Amsterdam).

## Reports and Professional Papers

- 2019 Herrick JE, Abrahamse T, Abhilash PC, Ali SH, Alvarez-Torres P, Barau AS, Branquinho C, Chhatre A, Chotte JL, Cowie AL, **Davis KF**, Edrisi SA, Fennessy MS, Fletcher S, Flores-Díaz AC, Franco IB, Ganguli AC, Speranza CI, Kamar MJ, Kaudia AA, Kimiti DW, Luz AC, Matos P, Metternicht G, Neff J, Nunes A, Olaniyi AO, Pinho P, Primmer E, Quandt A, Sarkar P, Scherr SJ, Singh A, Sudoi V, von Maltitz GP, Wertz L, Zeleke G (2019) Land Restoration for Achieving the Sustainable Development Goals: An International Resource Panel Think Piece. (United Nations Environment Programme, Nairobi).
- 2015 D’Odorico P, Rulli MC, Casirati S, **Davis KF**, Dell’Angelo J. Land use change induced by large scale land acquisitions. World Bank Conference on Land and Poverty, Washington DC, 23-27 March 2015.
- 2014 **Davis KF**, D’Odorico P. Does development dictate vulnerability? A global study of international migration and environmental change. Virginia Space Grant Consortium Annual Symposium, Norfolk, VA, 14 April 2014.

## AWARDS AND HONORS

---

- 2020 *IOP Publishing* Outstanding Reviewer Award
- 2019 *Water* Young Investigator Award
- 2018 American Geophysical Union, Science for Solutions Award
- 2018-2019 Columbia University, Data Science Institute, Data Science Institute Fellow
- 2017 Columbia University, The Earth Institute, Earth Institute Research Assistant Program: Deforestation and Large-Scale Land Acquisitions
- 2016-2018 The Nature Conservancy, NatureNet Science Fellow
- 2016 University of Virginia, Department of Environmental Sciences, Maury Environmental Prize for outstanding graduate student
- 2015 University of Virginia, Environmental Resilience and Sustainability Fellow (Mozambique)
- 2015 USAID Research and Innovation Fellowship (Bihar, India)
- 2013-2016 National Science Foundation Graduate Research Fellowship
- 2013-2015 Virginia Space Grant Consortium Graduate Research Fellowship
- 2011 University of Virginia, President’s Fellowship
- 2010-2011 Internship – Center for Sustainable Development (CESDEV), University of Ibadan (Nigeria)

2010	Elizabeth Dyer Award for Excellence in Biochemistry
2009	ESPN the Magazine/CoSIDA Academic All-America team, Men's Soccer
2007-2009	ESPN the Magazine/CoSIDA Academic All-District team, Men's Soccer

## **FUNDED PROJECTS**

---

2022-2026	Targeted Conservation: Targeted conservation: A coupled hydro-economic modeling approach to maximizing water availability across the Mississippi River Basin – United States Department of Agriculture National Institute of Food and Agriculture (\$649,572)
2021-2022	Global mapping of crop climate resilience – University of Delaware (\$15,000)
2021-2026	D-ISON: TRACK 1: Characterizing the Global Illicit Trade in Energy-Critical Materials using Machine Learning, Remote Sensing, and Qualitative Research – National Science Foundation (\$999,984)
2021-2022	Crop field delineation in Nigeria through deep learning – Oracle for Research (\$60,000)
2018-2019	Resilience and Fragility of Interstate Grain Trade in India – Data Science Institute, Columbia University (\$160,000)
2016-2018	Crop optimizations to improve food supply and reduce water scarcity – The Nature Conservancy (\$150,000)
2013-2015	Impacts of a Changing Climate on Modern International Human Migrations – Virginia Space Grant Consortium (\$10,000)
2013-2016	Quantifying Environmental Drivers of International Human Migration – National Science Foundation Graduate Research Fellowship (\$150,000)

## **MENTORING**

---

2021-	Alexander Checchi (University of Delaware, BS)
2021-	Michael Eruaga (University of Delaware, MS)
2021-	Spencer Hanggodo (University of Delaware, BS)
2021-	Bhoktear Khan (University of Delaware, PhD)
2021-	Kevin Ong'are Oluoch (University of Delaware, MS)
2020	Sam Becton (University of Delaware, BS)

2020- Kopo Oromeng (University of Delaware, PhD)  
2020- Hanan Abou Ali (University of Delaware, PhD)  
2019-2021 Tyler Sharretts (University of Delaware, MS)  
2019- Dongyang Wei (University of Delaware, PhD)  
2019- Piyush Mehta (University of Delaware, PhD)  
2018- Leslie Castro (Columbia University, BS)  
2017-2018 Anvi Mridul (Columbia University, MPA)  
2017-2019 Hee Jin Koo (Columbia University, BS)  
2017-2018 Sage Max (Columbia University, BA) (Senior thesis mentor)  
2016-2019 Lorenzo Rosa (University of California, Berkeley, PhD)  
2015 Antonio Seveso (Politecnico di Milano (Italy), MS)  
2015 Domingos Machava (Universidade Eduardo Mondlane (Mozambique), MS)  
2015-2018 Davide Chiarelli (Politecnico di Milano (Italy), MS/PhD)  
2014 Jennifer Ren (University of Virginia, BS)  
2012 Jerrica Frazier (University of Virginia, BS)

## **TEACHING**

---

### **University of Delaware (2020-)**

*Humans and Environmental Sustainability*, GEOG236/PLSC236 (instructor of record)  
*GIS for Environmental Research*, GEOG604 (instructor of record)

### **Columbia University (2016-2019)**

*Ecological and Social Systems for Sustainable Development*, The Earth Institute (guest lecturer)

### **University of Virginia (2011-2016)**

*Forest Hydrology*, Department of Environmental Sciences (guest lecturer)  
*Dryland Ecohydrology*, Department of Environmental Sciences (guest lecturer)

### **University of Delaware (2006-2010)**

*Introduction to Chemistry*, Department of Chemistry and Biochemistry (teaching assistant)



## LECTURES AND PRESENTATIONS

---

\* indicates lab group member

2021 **Davis KF** (2021) “Large-scale land investments and their socio-environmental effects”, Oral Presentation. Earth and Environmental Science department. Temple University, Philadelphia, Pennsylvania (*Invited*).

**Davis KF** (2021) “Assessing and improving the sustainability of food production systems”, Oral Presentation. China Agricultural University, Beijing, China (*Invited*).

**Davis KF** (2021) “Forests and the influence of the global land rush”, Grabbing the Forest Commons: From Diagnosis to Prescription, International Association for the Study of the Commons (IASC) 2021 Forest Commons Virtual Conference. Arizona State University, Tempe, Arizona (*Invited Panelist*).

**Davis KF** (2021) “Large-scale land investments and their socio-environmental effects”, Oral Presentation. Northern Illinois University, DeKalb, Illinois (*Invited*).

**Davis KF** (2021) “Large-scale land investments and their socio-environmental effects”, Oral Presentation. Ecological Society of America Annual Meeting, Long Beach, California (*Invited*).

**Davis KF** (2021) “Assessing and improving the sustainability of food production systems”, Oral Presentation. Environmental Engineering seminar, University of California, Berkeley, Berkeley, California (*Invited*).

**Davis KF** (2021) “Large-scale land investments and their socio-environmental effects in the tropics”, Oral Presentation. Environmental Systems seminar, University of California, Merced, Merced, California (*Invited*).

2020 **Wei D\***, **Davis KF** (2020) “Dietary Transitions Can Overcome the Nutritional Threat of Increasing CO<sub>2</sub>”, Oral Presentation, American Geophys. Union Annual Meeting, virtual.

**Mehta P\***, Kummu M, Siebert S, Ali T, Marston L, Xie W, **Davis KF** (2020) “Mapping Changes in Global Irrigated Areas”, Poster Presentation, American Geophys. Union Annual Meeting, virtual.

**Sharretts T\***, **Davis KF** (2020) “Spatio-temporal Evolution of Annual and Seasonal Water Scarcity in China, India, and the United States”, Oral Presentation, American Geophys. Union Annual Meeting, virtual.

Marston L, Lamsal G, Ancona Z, Caldwell P, Richter B, Ruddell B, Rushforth R, **Davis KF** (2020) “Reducing Water Scarcity by Improving Water Productivity”, European Geophys. Union Annual Meeting, virtual.

- Davis KF** (2020) “Circularity and COVID-19 in the US: A Food Supply Chain Perspective”, Oral Presentation, *Online Discourse on Circularity and COVID-19*. Interconnections for Making Africa Great Empowered and Sustainable (IMAGES) Initiative, Ibadan, Nigeria (*Invited Panelist*).
- 2019 **Davis KF** (2019) “Beyond the Green Revolution: Using data science to balance multiple objectives for sustainable agriculture”, Oral Presentation, Data and Society Council, Data Science Institute, Columbia University, New York, New York (*Invited*).
- Zhang X, Davidson EA, Pfeifer K, Yao G, Dalin C, Komarek A, Kanter D, **Davis KF**, Folberth C, Rodriguez FG, Fanzo J, Vishwakarma S, Zhao J, Zou T (2019) “A Sustainable Agriculture Matrix of environmental and socioeconomic indicators for protecting Earth’s climate”, Oral Presentation, American Geophys. Union Annual Meeting, Washington, D. C.
- Davis KF**, Marston L, Rushforth R (2019) “Aligning the multiple goals of food production, environmental flow provision, and nutrition in US watersheds”, Poster, American Geophysical Union Annual Meeting, Washington, D. C.
- 2018 **Davis KF** (2018) “Transdisciplinary approaches to food system sustainability”, Oral Presentation, American Geophysical Union Annual Meeting, Washington, D. C. (*Invited*).
- Davis KF**, Downs SM, Gephart JA (2018) “Propagation of environmental variability through global food supply chains: Current knowledge and future priorities”, Poster, American Geophysical Union Annual Meeting, Washington, D. C.
- Marston L, **Davis KF**, Rushforth R, Ruddell BL, Ancona Z, Bagstad K (2018) “Water footprint benchmarks for the United States”, Poster, American Geophysical Union Annual Meeting, Washington, D. C.
- Davis KF** (2018) “Data-driven decision support for sustainable food systems”, Oral Presentation, Delaware Environmental Institute, University of Delaware, Newark, Delaware (*Invited*).
- Davis KF**, Rulli MC, Olayide OE (2018) “Water footprints and nutritional yields of staple crops in Nigeria”, Oral Presentation, Ibadan Sustainable Development Summit, Ibadan, Nigeria.
- Davis KF** (2018) “Holistic pathways for achieving food security and water sustainability”, Oral Presentation, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) Biennial Colloquium, Shepherdstown, West Virginia (*Invited*).
- Davis KF** (2018) “A multidimensional framework for identifying actionable and sustainable food security solutions”, Oral Presentation, Department of Geography, University of Delaware, Newark, Delaware (*Invited*).

- Davis KF**, DeFries R, Richter B, Singh D, Rao N, Chhatre A, Fargione J (2018) “Assessing the climate resilience of grain production in India”, Oral Presentation, Earth Institute Postdoctoral Symposium, New York, New York.
- Davis KF** (2018) “A multidimensional framework for identifying actionable and sustainable food security solutions”, Oral Presentation, Earth System Science, Stanford University, Palo Alto, California (*Invited*).
- Davis KF**, Olayide OE (2018) “Assessing climate-resilient and nutritious staple crops in Nigeria”, Oral Presentation, Centre for Sustainable Development, University of Ibadan, Nigeria (*Invited*).
- 2017 **Davis KF**, DeFries R, Richter B, D’Odorico P, Singh D, Rao N, Chiarelli DD, Rulli MC, Chhatre A, Seveso A, Fargione J (2017) “A multidimensional approach to food production decision making”, Oral Presentation, American Geophysical Union Annual Meeting, New Orleans, Louisiana.
- Davis KF**, Rosa L, Rulli MC, D’Odorico P (2017) “The water-energy-food nexus of unconventional fossil fuels”, Poster, American Geophysical Union Annual Meeting, New Orleans, Louisiana.
- Davis KF**, DeFries R, Richter B, D’Odorico P, Singh D, Chiarelli DD, Rulli MC, Chhatre A, Seveso A, Fargione J (2017) “A multidimensional approach to food production decision making”, Oral Presentation, Earth Institute Postdoctoral Symposium, New York, New York.
- Davis KF**, Chiarelli DD, Richter B, Chhatre A, Singh D, DeFries R (2017) “Towards climate resilient and nutritious cereal crops in India”, Oral Presentation, American Association of Geographers Annual Meeting, Boston, Massachusetts.
- 2016 **Davis KF**, Seveso A, Rulli MC, D’Odorico P (2016) “Towards a globally optimized crop distribution: Integrating water use, nutrition, and economic value”, Oral Presentation, American Geophysical Union Annual Meeting, San Francisco, California.
- Davis KF** (2016) “Environmental costs of achieving global water and food security: Moving towards a sustainable water-food nexus of agriculture”, Oral Presentation, Earth System Science, University of California Irvine, Irvine, California (*Invited*).
- Davis KF**, Seveso A, Rulli MC, D’Odorico P (2016) “Water savings of redistributing global crop production”, Oral Presentation, European Geophysical Union Annual Meeting, Vienna, Austria.
- Davis KF**, Yu K, Rulli MC, Pichdara L, D’Odorico P (2016) “Human and environmental impacts of land acquisitions in Cambodia”, Poster, Public Days, Charlottesville, Virginia.

- 2015 Rulli MC, D’Odorico P, Chiarelli D, **Davis KF** (2015) “Water limited agriculture in Africa: Climate change sensitivity of large scale land acquisitions”, Oral Presentation, American Geophysical Union Annual Fall Meeting, San Francisco, California.
- D’Odorico P, Rulli MC, Casirati S, **Davis KF**, Dell’Angelo J (2015) “Land use change induced by large scale land acquisitions”, Oral Presentation, Land and Poverty Conference, World Bank, Washington, D. C.
- 2014 **Davis KF**, Yu K, D’Odorico P (2014) “Global livestock production: The importance of efficiency changes”, Poster, American Geophysical Union Annual Fall Meeting, San Francisco, California.
- Davis KF**, D’Odorico P (2014) “Does development dictate vulnerability? A global study of international migration and environmental change”, Oral Presentation, Virginia Space Grant Consortium Student Research Conference, Hampton, Virginia.
- 2013 **Davis KF**, D’Odorico P, Rulli MC (2013) “Food security in the 21st century: Global yield projections and agricultural expansion”, Poster, American Geophysical Union Annual Fall Meeting, San Francisco, California.
- Davis KF**, D’Odorico P, Rulli MC (2013) “Global carrying capacity and sustainable development”, Oral Presentation, 4<sup>th</sup> Ibadan Sustainable Development Summit, Ibadan, Nigeria.
- Davis KF**, D’Odorico P, Rulli MC (2013) “Potential impacts of land grabbing on agricultural employment (and rural-urban migrations) in Africa”, Oral Presentation, 4<sup>th</sup> Ibadan Sustainable Development Summit, Ibadan, Nigeria.
- Davis KF**, D’Odorico P (2013) “Vulnerability indices for environmental human migration”, Poster, University of Virginia Dept. of Environmental Sciences EnviroDay 2013, Charlottesville, Virginia.
- 2012 **Davis KF**, D’Odorico P (2012) “Lines of evidence for environmentally driven human migration”, Oral Presentation, American Geophysical Union Fall Meeting, San Francisco, California.
- D’Odorico P, Carr JA, **Davis KF**, Laio F, Ridolfi L, Rulli MC, Suweis S (2012) “Water, people, and the environment “, Oral Presentation, American Geophysical Union Annual Fall Meeting, San Francisco, California.
- Davis KF**. “Human migrations, the environment and GIS” (2012) Oral Presentation, University of Virginia Scholars’ Lab GIS Day 2012, Charlottesville, Virginia.

- 2009 **Davis KF**, Lee A, Zondlo NJ (2009) “Characterization of HIV-1 gp41 mimic six-helix bundle formation”, Poster, Undergraduate Summer Research Symposium, Newark, Delaware.
- 2008 **Davis KF**, Bhor S, Zondlo NJ (2008) “Alpha–Helix mimics to inhibit HIV-1 membrane fusion”, Poster, Undergraduate Summer Research Symposium, Newark, Delaware.

## **ACADEMIC AND PUBLIC SERVICE**

---

- 2021- Expert Advisory Board, Ullens Education Foundation (Nepal)
- 2021- Editorial Board Member, *Environmental Research Letters*
- 2021- Editorial Board Member, *Land*
- 2019-2021 Editorial Board Member, *Environmental Research Communications*
- 2019-2022 Guest Editor, *Environmental Research Letters*
- 2019-2021 Guest Editor, *Frontiers in Big Data*
- 2017- Editor, *Frontiers in Sustainable Food Systems*
- 2012 Editor, *African Journal of Sustainable Development*
- 2021 Planning Committee, *UD Data Science Symposium*
- 2021 Scientific Committee, IMAGES Initiative (Nigeria)
- Ongoing Reviewer: *Advances in Water Resources; Agricultural and Forest Meteorology; Ambio; The BMJ (British Medical Journal); BMJ Open; Conservation Letters; Earth’s Future; Environmental Development; Environmental Research Letters; Environmental Science and Policy; Frontiers in Ecology and the Environment; Frontiers in Sustainable Food Systems; Geophysical Research Letters; Global Biogeochemical Cycles; Global Environmental Change; Journal of Rural Studies; Land Development and Degradation; Livestock Science; Nature Climate Change; Nature Food; Nature Sustainability; Oxford Research Encyclopedia of Environmental Science; PLoS ONE; PNAS; Royal Society Open Science; Science; Science Advances; Science of the Total Environment; Sustainability; Sustainability: The Journal of Record; Trends in Food Science and Technology; Water Resources Research; World Development*

## **MEDIA**

---

Coverage in: *National Geographic, Daily Mail, The Guardian, MSN News, Medium, Carbon Brief, CNN, Times of India, Hindu Business Line, The Week, Outlook, New Food Magazine, ScienceDaily, PreventionWeb (UN), Business Standard, Eurasia Review, Zee News, The Financial Express, Firstpost, Deccan Chronicle, New Kerala, Reuters, Voice of America, The Hindu, Hindustan*

*Times, Financial Express (India), World Economic Forum, BBC Radio, Yahoo News, IOP Publishing, PhysicsWorld, PreventionWeb (UN), The Telegraph (India), The Independent (UK), Green Report, WIRED, MIT Technology Review, Environmental Research Web, Arstechnica, Technology Review, Environmental News Network, SeedQuest, Nature Asia, Zimbabwe Star, Lab Manager, Green Report, Food Navigator, Climate News Network*

## **PROGRAMMING AND COMPUTING SKILLS**

---

Matlab, R, Python, ArcGIS, QGIS, SPSS, GAMS, CropWat, Google Earth Engine, C++