

## KYLE FRANKEL DAVIS

*Earth Institute Postdoctoral Fellow & NatureNet Science Fellow*

The Earth Institute  
Columbia University  
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### **Education**

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May 2010 B.S., Honors Degree in Biochemistry, University of Delaware  
May 2016 Ph.D., Environmental Sciences, University of Virginia  
Advisor: Paolo D'Odorico

### **Honors and Awards**

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2016-present NatureNet Science Fellow (Mentors: Ruth DeFries and Brian Richter)  
2016-present Earth Institute Postdoctoral Fellow (Mentor: Ruth DeFries)

#### *Graduate*

2015 UVA 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 President's Fellowship (UVA)  
2010-2011 Internship – Center for Sustainable Development (CESDEV), University of Ibadan (Nigeria)

#### *Undergraduate*

2010 Phi Beta Kappa Honor Society  
2010 Elizabeth Dyer Award for Excellence in Biochemistry  
2009 ESPN the Magazine/ CoSIDA Academic All-America team  
2007-2009 ESPN the Magazine/ CoSIDA Academic All-District team

### **Publications**

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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.

**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 on the 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.

**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.

**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 (2012) Global desertification: Drivers and feedbacks. *Advances in Water Resources* **51**, 326–344.

## **Lectures and Presentations**

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**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.

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.

**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.

**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 Department of Environmental Sciences EnviroDay 2013, Charlottesville, Virginia.

**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.

**Davis KF**, Lee A, Zondlo NJ (2009) "Characterization of HIV-1 gp41 mimic six-helix bundle formation", Poster, Undergraduate Summer Research Symposium, Newark, Delaware.

**Davis KF**, Bhor S, Zondlo NJ (2008) “Alpha–Helix mimics to inhibit HIV-1 membrane fusion”, Poster, Undergraduate Summer Research Symposium, Newark, Delaware.

## **Reports and Media**

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*The changing world of meat production*. 2015. Earth Day feature. Weather Underground.

*Women and Child Protection Index and Mobile Application Manual*. Catholic Relief Services India. CRS, Delhi, 2015.

## **Teaching and Mentoring**

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2010            *Teaching assistant*, Dept. of Chemistry and Biochemistry, Univ. of Delaware

2012-2016    *Research mentor*, Dept. of Environmental Sciences, Univ. of Virginia

- Jerrica Frazier (2012), Univ. of Virginia
- Jennifer Ren (2014), Univ. of Virginia
- Davide Chiarelli (2015), Politecnico di Milano (Italy)
- Domingos Machava (2015), Universidade Eduardo Mondlane (Mozambique)
- Antonio Seveso (2015), Politecnico di Milano (Italy)
- Lorenzo Rosa (2016), Politecnico di Milano (Italy)

## **Academic Services**

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Editor: *African Journal of Sustainable Development* (2012)

Reviewer: *Advances in Water Resources; Agricultural and Forest Meteorology; Earth's Future; Global Biogeochemical Cycles; Global Environmental Change; Livestock Science; Science of the Total Environment; Trends in Food Science and Technology; World Development*

Workshops: NSF – “Coupled Production-Consumption Systems for Climate Change Mitigation: Designing Equitable Food, Energy, and Water Conservation Strategies (2015)”

UVA Enviro-Day - Co-chair and organizer (2014)

## **Programming and Computer-based Skills**

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Matlab, R, ArcGIS, CropWat