Molly E. Brown, PhD

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EDUCATION

Ph.D. in Geography, University of Maryland College Park, 2002
Area of Specialization: Remote Sensing, Economics and Development
Thesis Title: The Impact of Biophysical Conditions on Food Security in Three Sahelian Countries. Advisor: Stephen D. Prince
M.A. in Geography, University of Maryland College Park, 1998
B.S. in Biology and Environmental Sciences, Tufts University, 1991
Medford, Massachusetts

SELECT POSITIONS AND APPOINTMENTS

Research Professor, Department of Geographical Sciences, 2/15 - present
University of Maryland College Park

- Conduct global change and sustainable development research using socio-economic and biophysical datasets
- Collaborate with students, professors and associates to conduct high quality research across the biophysical and socio-economic fields to advance knowledge and use of environmental data
- Obtain funding for and work on international research projects focused on agriculture and food security and the impact of climate change

Chief Science Officer, 6th Grain Corporation, Bethesda, Maryland 2/15 – present

- Guide investments in geospatial information within mobile digital platform for farmers across the US, Eastern Europe, Brazil, Africa, middle East and south Asia
- Assist with survey development for farmer registries in developing regions
- Develop remote sensing data products for private agriculture protection companies
- Work with scientists to create value from developing spatially specific, locally relevant agriculture data products

Professor of Food-based Strategies for Nutrition 6/20 – 8/22
University of Greenwich, Faculty of Engineering and Sciences, Natural Resources Institute

- Part time appointment to engage with the Food and Nutrition Security Initiative (FaNSI) to bring satellite remote sensing and environmental variables into their research on food and nutrition security
- Collaborate with students, faculty and staff to scale up impact across multiple disciplines on nutrition investigations

Civil Servant Research Scientist, NASA Goddard Space Flight Center 10/08 – 1/15

- Vegetation index specialist ensuring a consistent and comprehensive long-term data record from vegetation for models and climate change analysis

- Interdisciplinary research focused understanding how organizations use and evaluating the benefit of remote sensing data in decision-making processes
- Conduct global change and sustainable development research using socio-economic and biophysical datasets
- Liaison and collaborator on biophysical and socio-economic research for the US Agency for International Development's Famine Early Warning Systems Network (FEWS NET)
- Lead author on USDA National Climate Assessment technical report as part of the US National Climate Assessment
- Lead of an initiative to implement pre-launch applications programs for missions, including the Soil Moisture Active Passive (SMAP) and ICESat-2 missions

Senior Research Scientist, Science Systems and Applications, Inc. at NASA 3/02 – 9/08

- Evaluation of integrated remotely sensed variables for long-term climate and anthropogenic environmental change studies, with particular focus on semi-arid regions
- Liaison and Principal Investigator in a project collaborating with the US Agency for International Development's Famine Early Warning Systems Network (FEWS NET), ensuring their access and effective use of a real time and projected vegetation index and rainfall data for Africa, Central America, Afghanistan and Haiti
- Advisor to NASA's Application Division's International Sustainable Development initiative

Faculty Research Assistant, University of Maryland 1/99 – 3/02

- Worked with scientists at NASA GSFC on a variety of technical and scientific objectives, including mapping, cataloging and delivering AVHRR 8km datasets to various clients
- Member of the NASA Global Mapping and Modeling Systems (GIMMS) Group, focused on producing and distributing a consistent, coherent 24-year vegetation data from AVHRR
- Conducted original research on the interaction of grain prices and vegetation dynamics in the West African Sahel

Professional Education Program Manager, SENECI 7/94 – 9/95

- Conceived, marketed, and implemented multiple 5-day local language (Wolof) professional development programs for secretaries and mid-level managers for this small American consulting firm in Dakar, Senegal

Volunteer, US Peace Corps, Senegal 6/92 – 7/94

- Developed an outdoor education program for elementary schools involving teacher training, curriculum development and student projects that was adopted by environmental education volunteers throughout the U.S. Peace Corps in the Africa and Latin American regions

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TEACHING EXPERIENCE

Assistant Professorial Lecturer in Geography, George Washington University 1/04 – 5/04

Geog 107, Introduction to Remote Sensing, Department of Geography
Course included weekly image processing laboratory, using ENVI software

Faculty Teaching Assistant, University of Maryland 9/97 – 5/98

Human Geography, Department of Geography, approximately 150 students, two semesters

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PUBLICATIONS

Refereed Papers

G. Santiago, AJP Carcedo, **ME Brown**, AP Nejadhashemi, P. V. Vara Prasad and IA Ciampitti (2023) Data Integration Dashboard for Assessing and Planning Sustainable Intensification Interventions: A Case Study in Senegal. Frontiers in Sustainable Food Systems. Volume 7, https://doi.org/10.3389/fsufs.2023.1208286

M.E. Brown, C. Mitchell, M. Halabisky, B. Gustafson, H do Rosario Gomes, A.D. Campbell, B. Poulter (2023) Assessment of the NASA Carbon Monitoring System Wet Carbon Stakeholder Community: Data needs, gaps, and opportunities. Environmental Research Letters. Doi: https://doi.org/10.1088/1748-9326/ace208

R. Burrows, K.L.Grace, **ME Brown**, A McNally (2022) Considering soil moisture in models of climate impacts on child health in farming centric countries. Population and Environment (in press)

M.E. Brown and KL Grace (2023) Data scarcity limits understanding of hydroclimatic drivers of food and urban security. Nature Water. Doi: 10.1038/s44221-023-00066-9

N Brooks, KL Grace, D. Kristiansen; S. Shukla; and **M.E. Brown** (2023) Investigating the Relationship Between Seasonal Agricultural Variability and Childbearing Goals. Global Environmental Change (in press)

J.A. Johnson, **M.E. Brown**, E. Corong, J.P. Dietrich, R. Henry, P. José v. Jeetze, D. Leclere, A. Popp, S.K. Thakrar, D.R Williams (2023) The meso scale as a frontier in interdisciplinary modeling of sustainability from local to global scales. Environmental Research Letters doi: 10.1088/1748-9326/acb503

M.E. Brown, A.J.C. Carcedo, M. Eggen, K.L, Grace, J. Neff and I. Ciampitti (2023) Integrated modeling framework for sustainable agricultural intensification. Frontiers In Sustainable Food Systems vol. 6 doi: 10.3389/fsufs.2022.1039962

M. Zamanialaei, **M.E. Brown**, J.L. McCarty, J.J. Fain (2022) Weather or not?: The role of international sanctions on food prices in Iran. Frontiers in Sustainable Food Systems DOI:10.3389/fsufs.2022.998235

M.E. Brown, S. Delgado Arias, M. Chesnes (2022) Literature Review shows that Engagement of Stakeholders Accelerates Applications of ICESat-2 data when compared to ICESat. Remote Sensing Applications: Society and Environment doi: 10.1016/j.rsase.2022.100874

A. Elders, ML Carroll, C.S.R. Neigh, A.L. D'Agostino; M.R. Wooten; **M.E. Brown** (2022) Estimating Crop Type and Yield of Small Holder Fields in Burkina Faso Using Multi-day Sentinel-2. Remote Sensing Applications: Society and Environment. doi: 10.1016/j.rsase.2022.100820

M.E. Brown, V.E. Escobar, F.M Younis, M. McGroddy, S. Delgado Arias, P. Griffith, and G. Hurtt (2022) Scientist-Stakeholder relationships drive carbon data product transfer effectiveness within NASA program. Environmental Research Letters doi: 10.1088/1748-9326/ac87bf

G.C. Hurtt, A. Andrews, K. Bowman, **M.E. Brown**, A. Chatterjee, V. Escobar, F. Fatoyinbo, P. Griffith, M. Guy, S.P. Healey, D.J. Jacob, R. Kennedy, S. Lohrenz, V. Morales, T. Nehrkorn, L. Ott, S. Saatchi, E. Sepulveda Carlo, S.P. Serbin, H. Tian (2022) The NASA Carbon Monitoring System Phase 2 Synthesis: Scope, Findings, Gaps and Recommended Next Steps. Environmental Research Letters 17(6) 063010; doi: 10.1088/1748-9326/ac7407

M.E. Brown, S. Mugo, S. Petersen, and D. Klauser (2022) Designing a Pest and Disease Outbreak Warning System for Farmers, Agronomists and Agricultural input distributors in East Africa. Insects *13*(3), 232; doi: 10.3390/insects13030232

Grace, K.L., Verdin, A., **Brown M.E.**, Bakhtsiyarava, M., Backer, D. and Billing, T. (2022) Conflict and climate factors and the risk of child acute malnutrition among children aged 24–59 months: a comparative analysis of Kenya, Nigeria, and Uganda. Spatial Demography doi: 10.1007/s40980-021-00102-w

A. Ssekyanzi, N. Nevejan, D. Van der Zande, **M.E. Brown**, G Van Stappen (2021) Identification of potential surface water resources for inland aquaculture from Sentinel-2 images of the Rwenzori region of Uganda. Water doi: 10.3390/w13192657

J Fanzo, T.G. Benton, **M.E. Brown**, N. Covic, K. Fitch, C.D. Golden, D. Grace, S. Grinspoon, M.-F. Hivert, P. Huybers, L.M. Jaacks, W.A. Masters, N. Nisbett, C. Rudie, R.A. Richardson, I. Sigman, C.R. Singleton, P. Webb, and W.C. Willett (2021) Sustainable Food Systems and Nutrition in the 21st Century. The American Journal of Clinical Nutrition **DOI:** https://doi.org/10.1093/ajcn/nqab315

M.E. Brown, K. Grace, T. Billing and D. Backer (2021) Considering climate and conflict conditions together to improve interventions that prevent child acute malnutrition. Lancet Planetary Health doi: 10.1016/S2542-5196(21)00197-2

K.B. Johnson, **M.E. Brown** and I. Becker-Reshef (2021) Democratizing Earth Observations-Based Science to Improve Agriculture, Food Security and Resilience, from Village to Globe. Frontiers in Sustainable Food Systems doi: 10.3389/fsufs.2021.707804

M.E. Brown (2021) Metrics to Accelerate Private Sector Investment in SDG2-Zero Hunger. Sustainability 13 (5967) doi: 10.3390/su13115967

Niles, M.T., B.F. Emery, S. Wiltshire, **M.E. Brown**, B. Fisher, T.H. Ricketts (2020) Climate Impacts associated with reduced diet diversity in children across nineteen countries. Environmental Research Letters. doi:10.1088/1748-9326/abd0ab

Enenkel, M., **Brown, M.E.,** Vogt, J.V., McCarty, J.L., Reid Bell, A., Guha-Sapir, D., Dorigo, W., Vasilaky, K., Svoboda, M., Bonifacio, R., Voigt, S., Anderson, M., Funk, C., Osgood, D., Hain, C., Vinck, P. (2020) Why predict climate hazards if we need to understand impacts? Putting humans back into the drought equation. Climatic Change. 162, pages 1161-1176. 1161–1176. 10.1007/s10584-020-02878-0

Jewiss J.L., **M.E. Brown**, and V. Escobar (2020) Satellite Remote Sensing Data for Decision Support in Emerging Agricultural Economies. IEEE Geoscience and Remote Sensing Magazine. Doi: 10.1109/MGRS.2020.3023343

Mikal J, Grace K, DeWaard J, **Brown M.E.,** Sangli G. (2020) Domestic migration and mobile phones: A qualitative case study focused on recent migrants to Ouagadougou, Burkina Faso. PLOS One. 15.8 (2020): e0236248. doi: 10.1371/journal.pone.0236248

M.E. Brown, C.W. Cooper, P. Griffith (2020) NASA's Carbon Monitoring System (CMS) and Arctic-Boreal Vulnerability Experiment (ABoVE) Social Network and Community of Practice. Environmental Research Letters. doi: 10.1088/1748-9326/aba300

Cooper, M.; **M.E. Brown**, M. Niles, Mahmoud, M. (2020) Text Mining the Food Security Literature Reveals Substantial Spatial Bias and Thematic Broadening Over Time. Global Food Security. Doi: 10.1016/j.gfs.2020.100392

M.E. Brown, Backer D., Billing T. White P., Grace K., Doocy S. and Huth P. (2020) Empirical Studies of Factors Associated with Child Malnutrition: Highlighting the Evidence about Climate and Conflict Shocks. Food Security Journal. DOI: 10.1007/s12571-020-01041-y

Cooper, M., **M.E. Brown**, S. Hochrainer-Stigler, G. Pflug, I. McCallum, S. Fritz, J. Silva, A. Zvoleff (2019) Mapping the Effects of Drought on Child Stunting. Proceedings of National Academy of Science. 116 (35) 17219-17224; doi: 10.1073/pnas.1905228116

Cooper, M., **M.E. Brown**, C. Azzarri, and R. Meinzen-Dick (2019) Hunger, Nutrition and Precipitation: Evidence from Ghana and Bangladesh. Population and Environment. Doi: 10.1007/s11111-019-00323-8

Zhao K., M. Wulder, T. Hu, R. Bright, Q. Wu, H. Qin, Y. Li; E. Toman, B. Mallick, X. Zhang, **M.E. Brown** (2019) Detect change-point, trend, and seasonality in satellite time series data to track abrupt changes and nonlinear dynamics: A Bayesian ensemble algorithm. Remote Sensing of Environment. Doi: 10.1016/j.rse.2019.04.034

M.E. Brown, V.M. Escobar (2019) NASA's Early Adopter Program Links Satellite Data to Decision Making. Remote Sensing Journal. 11:4, 406; doi: 10.3390/rs11040406

Osgood, D; Powell, B; Diro, R; Farah, C; Enenkel, M; **Brown, ME;** Husak, G; Blakeley, SL; Hoffman, L and McCarty, J (2019) Farmer Perception, Recollection, and Remote Sensing in Weather Index Insurance for Agriculture in the Developing World: an Ethiopia Case Study. Remote Sensing Journal 10: 12, 1887; doi: 10.3390/rs10121887

Iizumi T., M. Kotoku, P.C. West, J.S. Gerber, W. Kim and **M.E. Brown** (2018) Uncertainties of potentials and recent changes in global yields of major crops resulting from census- and satellite-based yield datasets at multiple resolutions. PLoS One 13: 9, e0203809. Doi: 10.1371/journal.pone.0203809

Enenkel, M., D. Osgood, M. Anderson, B. Powell, J. McCarty, C. Neigh, M. Carroll, M. Wooten, G. Husak, C. Hain, **M.E. Brown** (2018) Exploiting the convergence of evidence in satellite data for advanced weather index insurance design. Weather, Climate and Society 11: 1 doi: 10.1175/WCAS-D-17-0111.1

Niles, M. and **M.E. Brown** (2017) A multi-country assessment of factors related to smallholder food security in varying rainfall conditions. Scientific Reports. 7: 16277, doi: 10.1038/s41598-017-16282-9.

Davies D., **M.E. Brown**, K. Murphy, N. Stavros, B. Zavodsky, M. Carroll (2017) NASA Data for Time-Sensitive Applications: A Workshop Summary. IEEE Geoscience and Remote Sensing Magazine. Doi: 10.1109/MGRS.2017.2729278

M.E. Brown, Funk, C.C., Pedreros, D., Korecha, D., Lemma, M., Rowland, J.D., Williams, E., Verdin, J.P., 2017. A Climate Trend Analysis of Ethiopia—Examining Subseasonal Climate Impacts on Crops and Pasture Conditions. Climatic Change 142(1-2): 169-182. doi: 10.1007/s10584-017-1948-6

M.E. Brown, E.R. Carr, K. Grace, K. Wiebe, C. Funk, W. Attavanich, P. Backlund, L. Buja (2017) Do markets and trade help or hurt the global food system adapt to climate change? Food Policy Journal. 68 pp154–159. doi: 10.1016/j.foodpol.2017.02.004

M.E. Brown and J.L. McCarty (2017) Is remote sensing useful for finding and monitoring urban farms? Applied Geography. 80. pg 23-33. doi: 10.1016/j.apgeog.2017.01.008

K. Grace, L. Frederick, **M.E. Brown**, L. Boukerrou, and B. Lloyd (2017) Investigating important interactions between water and food security for child health in Burkina Faso. Population and Environment Journal 39(1), pp 26-46. doi: 10.1007/s11111-017-0270-6

D. Kim, M. Chin, T. Fiehl, H. Bian, L.A. Remer, H. Yu, **M.E. Brown** and W.R. Stockwell (2016) Role of surface wind and vegetation cover in multi-decadal variations of dust emission in the Sahara and Sahel. Atmospheric Environment.148, pg 282-296. doi: 10.1016/j.atmosenv.2016.10.051

M.L. Carroll, **M.E. Brown**, M.R. Wooten, J.E. Donham, A.B. Hubbard, and W.B. Ridenhour. 2016. In-situ Air Temperature and Relative Humidity in Greenbelt, MD, 2013-2015. ORNL DAAC, Oak Ridge, Tennessee, USA. doi: 10.3334/ORNLDAAC/1319

M.E. Brown (2016) Remote Sensing Technology and Land Use Analysis in Food Security Assessment. Journal of Land Use Science. 11(6) pg 623-641. doi: 10.1080/1747423X.2016.1195455

M.E. Brown, Sabrina Delgado Arias, Thomas Neumann, Michael Jasinski, Pamela Posey, Greg Babonis, Nancy Glenn, Charon Birkett, Vanessa Escobar, Thorsten Markus (2016) Applications for ICESat-2 Data from NASA's Early Adopter Program. IEEE Geoscience and Remote Sensing Magazine 4(4) 24-37. Doi:10.1109/MGRS.2016.2560759

M.E. Brown, Monica Ihli, Oscar Hendrick, Sabrina Delgado-Arias, Vanessa M. Escobar, Peter Griffith (2015) Social Network and Content Analysis of the North American Carbon Program as a Scientific Community of Practice Social Networks Journal. 44: 22-237. doi:10.1016/j.socnet.2015. 10.002

M.E. Brown and C. Wooldridge (2015) Identifying and quantifying the benefits of meteorological satellites. Bulletin of the American Meteorological Society. 97(1):182-185. doi:10.1175/BAMS-D-14- 00224.1

M.E. Brown and V. Kshirsagar (2015) Weather and international price shocks on food prices in the developing world. Global Environmental Change 35: 31-40. Doi: 10.1016/j.gloenvcha.2015.08.003

M.E. Brown, J.M. Antle, P. Backlund, E.G. Carr, W.E. Easterling, M.K. Walsh, C. Ammann, W. Attavanich, C. B. Barrett, M.F. Bellemare, V. Dancheck, C. Funk, K. Grace, J.S.I. Ingram, H. Jiang, H. Maletta, T. Mata, A. Murray, M. Ngugi, D. Ojima, B. O'Neill, and C. Tebaldi. (2015) Climate Change, Global Food Security, and the U.S. Food System. USDA Technical Document. Washington, D.C. DOI: 10.7930/J0862DC7

G. Shively, C. Sununtnasuk, and **M.E. Brown** (2015) Environmental Variability and Child Growth in Nepal. Health & Place 35:37-51 doi: 10.1016/j.healthplace.2015.06.008

A. Sen Gupta, D.G. Tarboton, P. Hummel, **M.E. Brown**, S. Habib (2015) Integration of an energy balance snowmelt model into an open source modeling framework Environmental Modeling and Software. 64: 205-218. doi: 10.1016/j.envsoft.2015.02.017

M.S. Moran, B. Doorn, V.M. Escobar, and **M.E. Brown** (2015) Connecting NASA Science and Engineering with Earth Science Applications. Journal of Hydrometeorology 16: 473–483. doi: 10.1175/JHM-D-14-0093.1

H. Park, S-Jeong, C-H Ho, J. Kim, and **M.E. Brown** (2014) Non-linear responses of vegetation green-up to local temperature in temperate and boreal forests in the Northern Hemisphere. Remote Sensing of Environment 165 doi: 10.1016/j.rse.2015.04.030

C. Duncan, A. Chauvenet, A., **M.E. Brown**, N. Pettorelli (2014) Energy availability, spatiotemporal variability, and its implications for animal ecology. Diversity & Distributions. 21:290-301. doi: 10.1111/ddi.12270

N. Higgins, B. Hintermann, **M.E. Brown** (2014) A Model of West African Millet Prices in Rural Markets. Food Policy. 52: 33-43 doi: 10.1016/j.foodpol.2014.09.011

A. McNally, G. J Husak, **M.E. Brown**, M. Carroll, C. Funk, Soni Yatheendradas, K. Aresenault, C. Peters-Lidard, J P Verdin (2014) Calculating crop water requirement satisfaction in the West Africa Sahel with remotely sensed soil moisture. Journal of Hydrometeorology 16, 295–305. doi: 10.1175/JHM-D-14-0049.1

M.E. Brown, A.E. Racoviteanu, D.G. Tarboton, A. Sen Gupta, J.D. Nigro, F.S. Policelli, S. Habib, M. Tokay, M. Shrestha, S. Bajracharya, P.R. Hummel, M. Gray, P.B. Duda, B. Zaitchik, V. Mahat, G. Artan, and A.S. Tokar (2014) An integrated modeling system for estimating glacier and snow melt driven streamflow from remote sensing and earth system data products in the Himalayas. Journal of Hydrology 519, p. 1859-1869. doi: 10.1016/j.jhydrol.2014.09.050

K. Johnson and **M.E. Brown** (2014) Environmental risk factors and child nutritional status and survival in a context of climate variability and change. Applied Geography 54 p. 209–221. Doi: 10.1016/j.apgeog.2014.08.007

M.E. Brown, M. Carroll, V.M. Escobar (2014) User needs and assessing the impact of low latency NASA Earth observation data availability on societal benefit. Space Policy 30, p 135-137. doi: 10.1016/j.spacepol.2014.05.002

T. Iizumi, J-J Luo, A.J. Challinor, G. Sakurai, M. Yokozawa, H Sakuma, and **M.E. Brown** (2014) Impacts of El Nino Southern Oscillation on global yields of major crops. Nature Communications 5 doi: 10.1038/ncomms4712

K. Grace, **M.E. Brown**, A. McNally (2014) Examining the link between food prices and food insecurity: A multi-level analysis of maize price and birthweight in Kenya Food Policy 46, p. 56-65. doi: 10.1016/j.foodpol.2014.01.010

M.E. Brown, K. Grace, G. Shively, K. Johnson, M. Carroll (2014) Using Satellite Remote Sensing and Household Survey Data to Assess Human Health and Nutrition Response to Environmental Change. Population and Environment. 36 (1) p. 48-72. doi: 10.1007/s11111-013-0201-0

P. Panday, C. Williams, K. Frey and **M.E. Brown** (2014) Application and evaluation of a snowmelt runoff model in the Tamar River basin, eastern Himalaya using a Markov Chain Monte Carlo (MCMC) data assimilation approach. Hydrological Processes, doi: 10.1002/hyp.10005

C. Rosenzweig, R. Horton, D. Bader, **M.E. Brown**, R. DeYoung, M. Fellows, L. Friedl, K. Gotwals, W. Graham, C. Hall, S. Higuchi, C. Hudson, G. Jedlovec, J. Kaye, M. Lowenstein, T. Mace, C. Milesi, W. Patzert, P. Stackhouse Jr., and K. Toufectis (2014) Enhancing Climate Resilience at NASA Centers: The Climate Adaptation Science Investigator Workgroup (CASI) for Science and Stewardship. Bulletin of the American Meteorological Society 95 (9) 1351–1363. doi: 10.1175/BAMS-D-12-00169.1

M.E. Brown and V.M. Escobar (2014) Assessment of Soil Moisture Data Requirements by the Potential SMAP Data User Community: Review of SMAP Mission User Community. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. 7 (1) 277–283. doi: 10.1109/JSTARS.2013.2261473

K. Johnson, A. Jacob, **M.E. Brown** (2013) Forest cover associated with improved health and nutrition outcomes in Malawi: Evidence from the Demographic and Health Surveys and NASA satellite remote sensing data. Global Health: Science and Practice, 1(2) pp. 237-248, doi: 10.9745/GHSP-D-13-00055

T. Iizumi , H. Sakuma, M. Yokozawa, J.-J. Luo, A.J. Challinor, **M.E. Brown**, G. Sakurai, and T. Yamagata (2013) Prediction of seasonal climate-induced variations in global food production levels. Nature Climate Change, 3: pp 904–908 doi: 10.1038/nclimate1945

T.O. West, **M.E. Brown**, R.M. Duren, S.M. Ogle, and R.H. Moss (2013) Definition, Capabilities, and Components of a Terrestrial Carbon Monitoring System. Carbon Management. 4(4) pp. 413-422. doi:10.4155/cmt.13.36

M.E. Brown, V. M. Escobar, M.S. Moran, D. Entekhabi, P.E. O'Neill, E. G. Njoku, B. Doorn, J.K. Entin (2013) NASA's Soil Moisture Active Passive (SMAP) Mission and Opportunities for Applications Users. Bulletin of American Meteorological Society. 94(8) 1125-1128. doi: 10.1175/BAMS-D-11-00049.1

M.E. Brown, V.M. Escobar, M. Macauley, J. Aschbacher, M.P. Milagro-Perez, B. Doorn, L. Friedl (2013) Policy for Robust Space-based Earth Science, Technology and Applications. Space Policy. 29(1). pp 76–82. doi: 10.1016/j.spacepol.2012.11.007

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M.E. Brown, K.C. Silver, K. Rajagopalan (2013) A City and National Metric Measuring Isolation from the Global Market for Food Security Assessment. Applied Geography, 38:119-128. doi 10.1016/j.apgeog.2012.11.015

M.E. Brown, K. de Beurs, M.Marshall (2012) Global Phenological Response to Climate in Crop Areas using Humidity and Temperature Models. Remote Sensing of Environment. 126. doi: 10.1016/j.rse.2012.08.009

M.E. Brown, M.K. Macauley (2012) Developing Earth Science Data and Models for Evaluating Climate Policy Outcomes. EOS Transactions AGU, 93(34), 328, doi:10.1029/2012EO340007.

M.E. Brown, F. Tondel, T. Essam, J.A. Thorne, B.F. Mann, K. Leonard, B. Stabler, G. Eilerts (2012) Country and Regional Staple Food Price Indices for Improved Identification of Food Insecurity. Global Environmental Change - Policy Dimensions. 22(3): 784–794. doi: 10.1016/j.gloenvcha.2012.03.005.

M.E. Brown, E. B. Brickley (2012) Evaluating the Use of Remote Sensing data in the USAID Famine Early Warning Systems Network. Journal of Applied Remote Sensing. 6, 063511, DOI:10.1117/1.JRS.6.063511

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S-J Jeong, C-H Ho, H-J Gim, and **M.E. Brown** (2011) Phenology shifts at start vs. end of growing season in temperate vegetation over the Northern Hemisphere for the period 1982–2008. Global Change Biology. Doi 10.1111/j.1365-2486.2011.02397

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M.E. Brown, H. Ouyang, S. Habib, B. Shrestha, M. Shrestha, P. Panday, M. Tzortziou, F. Policelli, G. Artan, A. Giriraj, SR. Bajracharya, A. Racovinteanu (2010) HIMALA: Climate Impacts on Glaciers, Snow and Hydrology in the Himalayan Region. Mountain Research and Development 30(4): 401-404, doi: 10.1659/MRD-JOURNAL-D-10-00071.1

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http://www.thesun.co.uk/sol/homepage/features/2764068/Attenborough-on-a-growing-threat-to-mans-future-the-growing-population.html
Participated in the production and taping of a six part podcast series called 'Science for a Hungry World', produced by Michelle Williams. These can be seen on Youtube:
http://www.youtube.com/watch?v=HDQ7XIOIAfY&feature=relmfu
Reaching the Millennium Development Goals: Eradicating Hunger in Eastern Kenya, 8/10/09
http://www.earthzine.org/2009/08/10/reaching-the-millennium-development-goals-eradicating-hunger-in-eastern-kenya/
Improving Famine Early Warning Systems, 7/31/09
http://environmentalresearchweb.org/cws/article/futures/39918
NASA Liveshot interviews with 12 media organizations on the launch of NOAA N Prime, 2/5/09
http://wjz.com/search/Link.ashx?R=http%3a%2f%2fwjz.com%2fvideo%2f%3fid%3d50804%40wjz.dayport.com
NASA inaugural image of the day on the redesigned Earth Observatory: Ethiopia and MODIS
http://www.alertnet.org/thefacts/satelliteimages/122587954515.htm
NASA Terra mission Earth-Sky Podcasts: Famine and Remote Sensing Data
http://www.earthsky.org/clear-voices/52824/molly-brown-on-early-warning-for-famine
NASA Data Show Some African Drought Linked to Warmer Indian Ocean (10/08)
http://www.nasa.gov/centers/goddard/news/topstory/2008/indianoceanwarm_release.html
Satellites Shed New Light on Famine Risks in E. Africa (8/08)
http://www.space.com/spacenews/archive08/drought_0811.html
Satellite Imagery Drives U.S. Global Food Security Effort (6/08)
http://www.america.gov/st/space-english/2008/June/
20080606144340abretnuh0.2882807.html?CP.rss=true
Famine Early Warning System Can Predict Food Shortages
http://www.america.gov/st/space-english/2008/June/
20080605143939lcnirellep0.3383295.html?CP.rss=true
Discovery Channel (with video): Where Hunger Will Hit in 2030
http://dsc.discovery.com/news/2008/01/31/hunger-crops.html
National Geographic: Warming May Cause Crop Failures, Food Shortages by 2030
http://news.nationalgeographic.com/news/2008/01/080131-warming-crops.html
NASA Goddard: NASA Researchers find Satellite Data can warn of Famine
http://www.nasa.gov/centers/goddard/news/topstory/2007/famine_data.html
ScienCentral (with video): Food Price Map
http://www.sciencentral.com/articles/view.php3?type=article&article_id=218392980
Earth and Sky series: New Science Tool Helps the Hungry
http://www.earthsky.org/radioshows/51747/new-science-tool-helps-the-hungry
Science Daily: Satellite Data can Warn of Famine, NASA researchers find
http://www.sciencedaily.com/releases/2007/07/070719111414.htm

Digital Journal: Satellite Data can Help Predict Famine
http://www.digitaljournal.com/article/213764/Satellite_Data_Can_Help_Predict_Famine
United Press: NASA Scientists can warn of famine
http://www.upi.com/NewsTrack/Science/2007/07/23/nasa_scientists_can_warn_of_famine/8310/

TALKS, PRESENTATIONS, AND POSTERS

2023

Presentation at the American Geophysical Union meeting entitled 'Engagement with humanitarian actors to accelerate uptake of predictive models of acute malnutrition to support anticipatory action' with coauthors Jude Mikal, Kathryn Grace, Matthew Gunther and David Backer presented at the American Geophysical Union meeting in San Francisco, CA in a session entitled 'Advances in Early Warning and Anticipatory Action for Hydrometeorological and Hydrogeomorphic Hazards' on December 11, 2023.

Poster at the American Geophysical Union meeting entitled 'Science and Data needed to support African Government Participation in the Voluntary Carbon Markets' presented at the American Geophysical Union meeting in San Francisco, CA in a session entitled 'Carbon Monitoring System s Research and Applications II Poster' on December 13, 2023.

Panel member at a session held in the Technology Innovation Hub 2, Green Zone at the Conference of Parties 28 in Dubai, UAE entitled 'AI for Climate Adaptation and Resilience' with Yossi Matias, VP Engineering and Research, Google, Johan Stander, Director of Services WMO, and Antonia Gawel, Global Director, Sustainability and Partnerships on December 3, 2024.

Panel member at session five at the 'High Level Workshop on Challenges and Requirements for Enhancing Food Security in the Arab Countries: The Impact on Economic and Financial Stability and the Role of Macroeconomic Policies' hosted by the Arab Monetary Fund, online on Monday, October 24, 2023.

Organized applications meeting entitled 'Deep Learning Approaches to Extract Land Cover and Land Use Information from Very High- Resolution Imagery' for 16 local scientists and stakeholders in Dakar Senegal at the Centre Suivi Ecologique on October 9, 2023.

Invited participant in panel entitled 'Parameters for Sustainable Data Management Framework in sustainable agriculture: An Industry Perspective', at conference entitled 'AI in agriculture: innovation and discovery to equitably meet producer needs and perceptions, in Orlando, Florida on April 18, 2023.

Invited speaker at an International Development Masters seminar at Baruch College, City University of New York (CUNY). Talk entitled 'The Impact of Temperature Extremes on Nutrition and Diet Diversity in Children under Five' on March 22, 2023.

Invited talk at the Environmental Defense Fund (EDF) Symposium on the Role of Satellites in Meeting the Climate Crisis entitled 'The Role of Satellite Remote Sensing in Water and Food Security', held via zoom conference on February 16, 2023.

Invited talk at the global Sustainable Technology and Innovation Community (G-STIC) conference in Rio de Janeiro, Brazil at a panel session entitled 'Climate Change and Food Systems: Innovative approaches and technologies to transform food systems resiliency to climate change – a focus on smallholder farmers and agribusiness' on February 15, 2023.

Invited talk given at the Prairie View Texas A&M University in Prairie View, TX at their Land Grant Seminar Series entitled 'Satellite-Driven Agriculture Mapping and Monitoring for improved Productivity' on January 26, 2023.

2022 Poster given at the American Geophysical Union meeting in Chicago, IL entitled 'Integrating agriculture and agronomic models with social and demographic modeling to accelerate sustainable agricultural intensification', with Ana J.P. Carcedo, Michael Eggen, Kathryn L. Grace, Jason Neff, Ignacio A. Ciampitti on December 14, 2022.

Invited talk at the American Geophysical Union meeting in Chicago, IL entitled 'Metrics to Accelerate Private Sector Investment in Sustainable Development Goal 2—Zero Hunger' on December 13, 2022

Talk given at the American Geophysical Union meeting in Chicago, IL entitled 'The Impact of Temperature Extremes on Nutrition and Diet Diversity in Children under Five' with Kathryn Grace and Meredith Niles on December 13, 2022.

Co-authored poster at the American Geophyscial Union meeting in Chicago IL entitled 'Reflecting on a decade-plus of NASA ICESat-2 mission applications' with Sabrina Delgado Arias and Thomas Neuman on December 13, 2022.

Invited talk at the Conference of Parties (COP) 27 Sharm el Sheikh, Egypt, at a Panel session focusing on Machine Learning and Artificial Intelligence to accelerate information for Smallholder farmers, November 16, 2022.

Invited talk at the USAID DQWD Climate Change and Nutrition monthly meeting entitled 'Linking Climate and Nutrition in Models' by M. Niles, M. Brown, T. Ricketts, S. Wiltshire, B. Emery and B. Fisher on May 20, 2022.

Invited talk at the Climate Impacts Group Meeting at Columbia University entitled 'Modeling Human Health and Nutrition together with Climate and Remote Sensing Data' on April 13, 2022 with Kathryn Grace, University of Minnesota

Invited talk at the Integrating Remote Sensing Data for Land Management Decision-Making workshop, organized by the Applied Earth Observations Innovation Partnership (AEOIP) entitled 'What are Communities of Practice?' on March 23, 2022

Invited talk at the University of Maryland PTK Faculty meeting Maintaining a Soft Money Position at UMD Geography' on January 11, 2022

Invited keynote address at the Darwin Festival at Salem State University entitled 'Climate change and Food Security - Evidence that connects changes in temperature, rainfall and vegetation dynamics to nutrition and human health outcomes' on February 8, 2022 - https://www.salemstate.edu/darwinfestival

Invited talk at the Minnesota Demography and Aging Series Seminar Series entitled 'Modeling Human Health and Nutrition together with Climate and Remote Sensing Data' on January 31, 2022 with Kathryn Grace, University of Minnesota

2021 Presentation at the American Geophysical Union Fall meeting entitled 'Generating Affordable, Scalable Agriculture Data through Mobile-Based Advertising, Field Digitization and Farm Record Keeping' on December 17, 2021 with Adam Wills Learn.Ink and Alex FitzGerald 6th Grain Corporation

Presentation at the American Geophysical Union Fall meeting entitled 'Scientist-Stakeholder Relationships Drive Carbon Data Product Transfer Effectiveness within the NASA Carbon Monitoring System' on December 14, 2021 with Vanessa M Escobar NOAA Washington DC, Fatima Younis University of Maryland, Edil Sepulveda Carlo, Megan McGroddy, Peter C Griffith NASA Goddard Space Flight Center and George C Hurtt University of Maryland College Park

Invited talk at the USAID AgriLinks remote seminar entitled 'Using Satellite Data as a Climate Adaptation Strategy to Enhance Food Security' on November 3, 2021, with two other speakers, including Walter Baethgen IRI Columbia University and Faisal M Qamer, ICIMOD Nepal. My talk was titled 'Microinsurance for Agriculture'.

Invited seminar at the University of Vermont GundXchange seminar series held at the University of Vermont on September 24, 2021, entitled 'Exploring factors that drive scientist-stakeholder relationships to improve science utilization for challenging environmental problems'.

Presentation at the University of Maryland Joint AI/ML Workshop entitled 'On the Pathway to a Digital Earth' held at the University of Maryland College Park on September 22, 2021, entitled 'Developing a virtual farmer profile using ML/AI techniques', coauthored by Dmitry Klepikov and Dmitry Ksenofontov.

Invited Seminar at the Department of Geographical Sciences, University of Maryland, virtual seminar series on September 16, 2021 entitled '6th Grain Overview for the University of Maryland'

Presentation at a panel during the International Association of Agricultural Economists (IAAE) on August 26, 2021 entitled 'Using Earth Observation Data and Technological Tools to Measure Food Availability and Access'. Remote conference.

Talk at 'Developing Smallholder Oriented IPM Strategies for Fall Armyworm Management', on Aug 24-26, 2021 (held remotely), entitled 'Designing a Pest and Disease Outbreak Early Warning

System for Farmers, Agronomists and Agricultural Input Distributors', with S. Mugo, S. Petersen and D. Klauser.

Invited talk at the 22nd Annual Harvard Nutrition Obesity Research Symposium, Cambridge MA, June 15, 2021, entitled 'Climate change and global food security', held remotely.

Invited talk at the University of Greenwich's Research and Awards Celebration, May 12, 2021, entitled 'The Impact of Temperature Extremes on Nutrition and Diet Diversity in Children Under Five'. Event held remotely.

Invited presentation at the Early Career Researcher Network Workshop at the University of Greenwich on April 28, 2021 entitled 'Publishing and Team Building for Early and Mid-career Researchers – How to Build your Network'.

Panel presentation at the North American Carbon Program's 2021 Open Science meeting, given remotely on March 19 2021, on the NACP Science Implementation Plan, along with the other chapter leads and Christopher Williams, chair.

Plenary talk at the North American Carbon Program's 2021 Open Science meeting, given remotely on March 5 2021, entitled 'Analysis of NASA's Carbon Monitoring System and Arctic-Boreal Vulnerability Experiment (ABoVE) Social Network and Community of Practice: Conclusions for NACP', with M.W. Cooper and P.C. Griffith.

Invited talk at the IRI Columbia University seminar series. The talk was entitled 'Modeling Child Diet Diversity and Nutrition with Climate and Remote Sensing Data' and was given remotely on March 9, 2021.

Keynote address at the Food and Nutrition Security Initiative (FaNSI) Conference on January 25 2021, held remotely at the Natural Resources Institute, University of Greenwich, United Kingdom, entitled 'Using digital remote sensing data and technological tools to enhance understanding of food and nutrition challenges'.

2020

Invited talk at a Fall AGU Union session (14-06) on December 11, 2020 entitled 'Creating a community of practice through scientific teams and support: NASA Carbon Monitoring System (CMS) and Arctic Boreal and Vulnerability Experiment (ABoVE)', with coauthors Peter C Griffith and Matthew Cooper.

Poster presentation at the AGU Fall meeting entitled 'Creating scalable, quantitative smallholder farmer data for model training through conservational record keeping', December 10, 2020, with Adam Wills farm.ink.

Invited talk at the Department of Geographical Sciences of the University of Maryland seminar series, November 19, 2020, entitled 'Remote sensing and climate data in child nutrition models'.

Invited talk at the Faculty of Science and Engineering of the University of Greenwich Research Seminars, November 18, 2020, entitled 'Using Digital Remote Sensing Data and Technological tools to drive Food Security Decision Making'.

Panel participation at the Borlaug Dialogue Side Event entitled 'Toward Equitable Datasets and Data Sharing for AI in Agriculture', held 15 October 2020 with Hammed Alemmohamed, Radiant Earth Foundation; Youssef Travaly, AllSights Africa, and Richard Choularton, TetraTech.

Poster presentation at the ABoVE science meeting, June 1-4, 2020. Poster was entitled 'NASA's Arctic-Boreal Vulnerability Experiment (ABoVE) and Carbon Monitoring System (CMS) Social Network and Community of Practice', with Matthew Cooper and Peter Griffith as co-authors.

Presentation entitled 'Fall Armyworm Model: Initial Modeling Results', presented at a meeting at Syngenta Foundation and Syngenta corporation, January 8, 2020.

2019

Presentation entitled 'NASA Carbon Monitoring System Phase 2 Synthesis: Scope, Findings, Gaps, and Recommended Next Steps' at the American Geophysical Union conference by George C Hurtt University of Maryland, Arlyn E Andrews, NOAA/ESRL, Kevin W Bowman, NASA Jet Propulsion Laboratory, Molly Elizabeth Brown, University of Maryland, Vanessa M Escobar, NASA Headquarters, Temilola Fatoyinbo, NASA GSFC, Sean P Healey, Rocky Mountain Research Station, Daniel Jacob, Harvard University, Robert E Kennedy, Oregon State University, Steven E Lohrenz, University of Massachusetts Dartmouth, Thomas Nehrkorn, AER Inc, Lesley E Ott, NASA Goddard Space Flight Center, Sassan Saatchi, NASA Jet Propulsion Laboratory, Shawn Serbin, Brookhaven National Laboratory, Edil Sepulveda Carlo, NASA Goddard Space Flight Center / SSAI, and Peter C Griffith, NASA/GSFC. Wednesday, December 11, 2019.

Poster presentation entitled 'Developing Predictive Risk Models for Pest Outbreaks using Remote Sensing Data, Weather Information and Farmer-provided Reports on Crop Damage' with Vladimir Eskin and Jyothy Nagol of the 6th Grain Corporation, Tuesday, December 10, 2019

Poster presentation entitled 'Modeling Climate and Conflict Shocks on Acute Malnutrition in Children', with David Backer, Trey Billing, and Kathryn Grace, in a session entitled 'GeoHealth Research in the global South: Themes and Priority Research Questions' at the American Geophysical Union (AGU) meeting on December 11, 2019 in San Francisco, CA.

Presentation entitled 'Climate and conflict drivers of acute malnutrition outcomes in children' at the Sustainability and Development Conference held in Ann Arbor, MI October 11-14, 2019.

Panel Presentation at the AGRF Ghana Meeting called 'Agronomy to Scale' session, Accra, Ghana, September 2, 2019, entitled 'Mobile Technology for Scaling Impact'.

Presentation at the Food Security and Nutrition Working Group on July 25, 2019 in Nairobi, Kenya to present the MERIAM Action Against Hunger project. The presentation focused on presenting research that shows the impact of climate and conflict shocks on acute malnutrition outcomes.

Presentation of 6th Grain's 'Fall Armyworm Risk Prediction System' at the Bill and Melinda Gates Foundation Grand Challenges meeting, Addis Ababa, Ethiopia, May 8-9, 2019.

2018

Presentation entitled 'Integrating Climate Shocks and Climate into Malnutrition Research and Decision Making' at the AGU Fall meeting on December 13, 2018, with coauthors P. White, K. Grace, D. Backer, P. Huth and S. Doocy.

Presentation entitled 'Farmer Perception, Recollection, and Remote Sensing in Weather Index Insurance for Agriculture in the Developing World: an Ethiopia Case Study' on December 11, 2018, with presenter B. Powell and coauthors D.E. Osgood, R. Diro, M. Enenkel, G. Husak, J. McCarty and C. Farah.

Presented 6th Grain's FieldFocus to collective rice farmers in Vietnam Rach Gia district, Mekong Delta on May 21, 2018.

Presented 6th Grain's crop mapping capability to Sucden traders in Paris, France, on April 26, 2018.

Presented 6th Grain's FieldFocus and other capabilities at Logos Grain LLC, Astana, Kazakhstan, March 30, 2018, with Serik Saltykov from Syngenta.

Attended the MERIAM Technical Advisory Group Meeting at Johns Hopkins University in Baltimore Maryland from February 8-9, 2018. Presented satellite remote sensing data products being used in predictive models and participated in discussions with advisory group. Co-presenters were Laixiang Sun, Peter White and David Backer from the University of Maryland.

Attended the INFEWS Annual meeting in Santa Barbara, CA January 18-19, 2018 and presented ongoing research on the impact of household electricity on stunting, wasting and mortality in children in Ethiopia. Kathryn Grace and Maryia Bakhtsiyarava coauthors.

2017

Poster presentation entitled 'Mobile Digital Applications for Farmers to Transform Agriculture Statistics from the Bottom Up' at the American Geophysical Union meeting, December 2017 in New Orleans. Coauthors are Kathryn Grace of University of Minnesota, Ritvik Sahajpal and Jyothy Nagol of the University of Maryland.

Invited presentation of '6th Grain Digital Agriculture Systems' to the CGIAR International Rice Research Institute in Los Banos, Philippines from October 25-26, 2017, with the Rice Crop Manager team and research leadership.

Invited Keynote Address at the SPIE Security conference entitled 'Remote Sensing in Food Security Analysis', Warsaw, Poland on September 11, 2017.

Presentation to Lindiwe Majele Sibanda, Vice President, Country Support, Policy and Delivery, Alliance for a Green Revolution in Africa (AGRA), on the potential of Digital Agriculture to promote strengthening of the agriculture value chain and increase knowledge of farmer activities, September 1, 2017.

Invited presentation at the Massey Geoinformatics at the Institute of Natural and Mathematical Sciences, Massey University, New Zealand, entitled 'Is Remote Sensing Useful for Finding and Monitoring Urban Farms? Combining Data Mining and Geospatial Methods for Mapping Peri-

Urban Agriculture in Detroit, Harare, Dakar, and Ho Chi Minh City. by Jessica McCarty and Molly Brown.

Presentation of 'Approaches to Digital Agriculture' at a booth at the ICT for Ag conference, held in Washington DC June 23, 2017, with Sergey Lebedinets, 6th Grain Global.

Presentation of 'Summary of Existing Food Price data in FAO and WFP' at the MERIAM meeting, Johns Hopkins University, Baltimore, MD, May 30-31, 2017.

Invited presentation at Satellite 2017 conference, Barcelona Spain, entitled 'Engaging the User Community in Developing Earth Observing Remote Sensing Data Products: NASA's New Guidelines for Demonstrating Impact' by Vanessa Escobar and Molly Brown, May 10-11, 2017.

Invited presentation at the National Academy of Sciences' Civil Space Society Meeting in Washington DC entitled 'Earth Observation and Mobile Software to Transform Farming' on May 2, 2017.

Invited presentation at the Foresight conference entitled 'Global Agri-Food Systems to 2050 – threats and opportunities', held on April 7-8, 2017 at the University of Naples Federico II; Department of Agricultural Sciences Portici, Italy. The presentation was entitled 'Precision agriculture, mobile data and emerging technologies', by Yanbo Huang (USDA) with myself as co-author.

Presentation of 'Climate Change Impacts on the Food System' at the Scientific and Technical Advisory Council meeting of the Culinary Institute of America Harvard T.H. Chan School of Public Health—Department of Nutrition Menus of Change March meeting, March 17, 2017.

Presentation of European runoff tool to Syngenta partners for 6th Grain contribution to runoff and leaching risk in Hungary, Basel Switzerland, February 21, 2017,

Presentation on price and nutrition datasets for the INFEWS/T1: Understanding multi-scale resilience options for climate-vulnerable regions, Johns Hopkins University, January 27, 2017.

2016

Presentation at the Global and regional water-food-energy security under changing environments session at the American Geophysical Union Meeting, December 12-16, 2016 entitled 'Smallholder Farmer Climate Risks and Resilience: Implications for Food Security', with Meredith Niles

Invited presentation at the Chongqing Banghao seed company on using FieldFocus digital agricultural tools to monitor maize seed replication remotely, Chongqing, China, November 17, 2017.

Co-organized the workshop entitled 'NASA Data for Time-Sensitive Applications' at Langley Space Flight Center, October 28-29, 2016, in collaboration with Diane Davies, and sponsored by the NASA Applied Science program.

Invited presentation at the IFPRI workshop on the Technological Innovations and Agricultural Micro Insurance, held in Washington D.C. on October 13-14, 2017.

Presentation at the ICT4Ag conference in Washington DC for 6th Grain Corporation on June 10, 2016 to present remote sensing and survey approaches to developing appropriate information products for farmers.

Invited talk at the Food Security Symposium held by the World-Wide Human Geography Data (WWHGD) Working Group on April 5, 2016 at USGS Headquarters in Reston, VA.

Presented a talk at the Climate Prediction Applications Science Workshop held in Burlington Vermont on March 22, 2016. The talk was entitled 'Farmer Perception and Index Design in Weather Insurance for Agriculture in the Developing World'.

Invited talk at a workshop entitled 'Insurance and Remote Sensing' held at Reading University in Reading, UK on February 17-18, 2016. My talk was entitled 'ALEXI Evapotranspiration for Insurance Applications', coauthored by Christopher Hain, UMD and Martha Anderson, USDA.

Invited talk at the Eisenhower National Defense University on February 29, 2016 entitled 'Climate change and its impact on global agriculture and food security'. Talk given to a class of senior defense and government executives studying agribusiness.

2015

Invited talk at the American Geophysical Union meeting on December 14-18, 2015 entitled 'Climate Change and Food Security: Food Access, Utilization and the US Food System' in the Global Environmental Change session entitled 'Observed and Projected Climate Change Impacts on Water Resources and Agriculture III'.

Invited talk at the American Geophysical Union meeting on December 14-18, 2015 entitled 'The Value of High Resolution Forest Canopy Maps for Implementing Carbon Sequestration Programs in Maryland' with colleagues Phillip C Abbott, Rachel Hittich, Vanessa Escobar, and Ralph Dubayah, in a public affairs session entitled 'Valuing Tradeoffs in Natural Resources using Geospatial Information'.

Invited talk at a Champlain College undergraduate class on December 7, 2015 entitled 'Observing Food and Agriculture from Space: Food Availability, Affordability, and Global Health'.

Invited talk at the GUND institute at the University of Vermont on September 11, 2015 entitled 'Spatial Specificity: the Final Frontier of Environmental-Human Health Analyses' with input from K. Johnson, K. Grace, J. Shively and F. Davenport.

Briefing to the USDA and the USGCRP committee on August 26, 2015 in Washington DC entitled 'Climate change, global food security, and the US food system', with Margaret Walsh USDA, Peter Backlund Colorado State University and Anthony Murray USDA.

Invited talk at the National Security Agency in Ft. Meade, Maryland on February 3, 2015 entitled 'Food Security, the Food System and Climate Change'.

Invited keynote address at the Agriculture and Climate Change conference held in Amsterdam, the Netherlands, on February 15-17, 2015 entitled 'Agriculture, Climate Change and Food Security' during the opening plenary on Sunday, February 15.

Panel talk at the 2015 ESIP Winter Meeting, January 6-8, 2015 - Earth Science and Data in Support of Food Resilience: Climate, Energy, Water Nexus, held in Washington DC. The panel was entitled 'User Needs for Food Resilience' along with panel members Dr. Gary Eilerts of USAID, Josh Leiberman of OGC Agriculture, and Liangzhi You of IFPRI.

2014

Presentation entitled 'Linking Remote Sensing Data and Energy Balance Models for a Scalable Agriculture Insurance System for sub-Saharan Africa' at the American Geophysical Union meeting in San Francisco, CA, on December 15-19, 2014, with coauthors Daniel Osgood, Jessica McCarty, Gregory Husak, Christopher Hain, Martha Anderson, and Christopher Neigh in a session entitled 'Climate Variability and the African Environment, Water Resources, and Food Security II'

Invited panelist at the annual 'Changing Landscapes: Observed from Space' forum held at Howard Community College Science and Technology Division on November 8, 2014. My talk was entitled 'Climate, Ecosystems and Food'. The event also featured talks from Joseph Sexton, University of Maryland and Peter Claggett, US Geological Survey. Panelists included James Cannistra, Maryland Department of Planning, Josh Klein, Ben Cardin's Office and Brenda Ekwurzel, Union of Concerned Scientists.

Invited panelist at the American University School for International Service 'First and Final Frontiers: Farming and Space Exploration Technology Transfer and Policy' held on November 6, 2014. Other panelists were Netra Chhetri, Arizona State University, Max Vazoff, mv2Space LLC and Rebecca Spyke Keiser, American University.

Invited panelist at the George Washington University's Planet Forward Salon Series on November 5, 2014. The topic of the Salon was 'Women and Agriculture'. Fellow panelist was Tjada McKenna, Assistant Administrator for Feed the Future, US Agency for International Development.

Invited panelist at a National Academy of Sciences workshop entitled 'Emerging Science For Environmental Health Decisions: Modeling the Health Risks of Climate Change' held at the Pew Charitable Trusts in Washington DC on November 3-4, 2014. The event was held for the 'Standing Committee on the Use of Emerging Science for Environmental Health Decisions'. The panel on which I participated title is 'Systems Thinking and Modeling Health Impacts of Climate Change'.

Invited appearance at the Geography Department class 212 at the University of Maryland College Park on Monday, November 3 to speak about career and research in the government arena.

Invited talk presented at Alabama University Huntsville on Wednesday, October 29 at the weekly seminar series. The talk was entitled 'Food Security, Food Prices and Climate Variability' and was presented to the Earth Science data communities at Marshall Space Flight Center and university personnel co-located with the Marshall employees in Huntsville.

Invited talk presented at Cornell University on Wednesday, October 22 at the Cornell International Institute for Food, Agriculture and Development at their weekly seminar series. The talk was entitled 'Food Security, Food Prices and Climate Variability'.

Invited presentation at the International Symposium on Weather and Climate Extremes, Food Security and Biodiversity, held at George Mason University on October 20-24, 2014. The talk was entitled 'Food security, food prices and extreme weather: modeling and forecasting impacts', presented in the session 'Modeling the Impacts of Climate Variability and Climate Change on the Agricultural Sector Coordinated by the Agricultural Model Intercomparison and Improvement Project (AgMIP)', organized by Alex Ruane, NASA GISS.

Presentation at a conference entitled Information for Meeting Africa's Agricultural Transformation and Food Security Goals (IMAAFS) held in Addis Ababa, Ethiopia, 1-3 October, 2014. A talk was presented entitled 'Impact of Weather and International Price Shocks on Local Monthly Food Price observations from 769 commodity-location pairs' in a session on price collection and tools.

Presentation at AGRA office in Accra, Ghana on July 29, 2014 describing the ACCESS funded project that seeks to put satellite remote sensing information on vegetation, rainfall, temperature and soil moisture into the hands of farmers, traders and agribusinesses in Africa. We are collaborating with AGRA and ImageAD, their partners, to develop a mobile website, mobile application and SMS text feed system that can respond to queries and push information to these local actors.

Attended a workshop hosted by the Wellcome Trust in London, England to discuss future research directions for the environment, health and nutrition nexus on July 23 and 24, 2014. Participated in a panel on technology, health and environment interactions.

Presentation at the HyspIRI Mission Study Symposium, held at NASA Goddard Space Flight Center June 4-5, 2014 entitled 'NASA Earth Science Data Products for Farmer Management and Cell Phone Systems', with coauthors Greg Husak UCSB, Jeff Hosler NASA GSFC, Matieyedou Konlambigue and Aboubacar Diaby from AGRA

Presentation on the 'Getting Smart about Change: Climate and Agriculture' panel at the 2014 Feed the Future Global Forum, held in Alexandria VA on May 20-21, 2014. The presentation was entitled 'Agriculture, Food Security and Global Climate Change'. The other speakers were Dennis Garrity, the United Nations Drylands Advisor, Jerry Glover, Senior Sustainable Agricultural Systems Advisor at USAID and Marc Sadler, Practice Leader of Agriculture, Environment and Climate Change at the World Bank.

Presentation at the Coordination Group for Meteorological Satellites (CGMS) Socioeconomic Benefits Tiger Team Workshop held in Darmstadt, Germany on April 24-25, 2014. The presentation was entitled 'Working with Early Adopters to Determine the Socio-Economic Benefits of SMAP data', by M. Brown and V. Escobar.

Presentation at the NASA Mid-level Leadership Development Panel on March 28, 2014. The talk was entitled 'Food Security from Space' and described research set out in the forthcoming Earthscan book.

Invited talk at the National Academies of Science committee meeting on 'Considerations for the Future of Animal Science Research' held in Washington DC on March 10, 2014. The talk was entitled 'The Future of US Animal Production' and was invited to discuss questions relevant to the Animal Science Research committee.

Invited talk at the European Commission's Joint Research Centre's Institute for Prospective Technological Studies (IPTS) in Seville, Spain on March 6, 2014 entitled 'Current and potential studies on the analysis of price'. The meeting focused on better integrating food price research in the US with that conducted by the European Commission.

Presentation at the American Meteorological Society's Annual meeting in Atlanta GA February 3-6, 2014 entitled 'Food Price Seasonality and Drought in Developing Countries', with coauthors P. Adhikari, P. Lukyanenko and K.M. de Beurs.

Invited panel presentation at the National Council for Science and the Environment (NCSE) 14th National Conference and Global Forum on Science, Policy and the Environment, held in Washington DC January 28-30, 2014. The panel was entitled 'Framing the Challenges Facing Societies', and was also attended by Bryan Bloomer US EPA, Edward Maibach George Mason University and Maggie Opondo University of Nairobi.

2013 Presentation entitled 'Food Price Volatility and Decadal Climate Variability' at the American Geophysical Union meeting in San Francisco, CA, on December 9, 2013 in an oral session entitled 'Understanding and Assessing Natural and Societal Impacts of Decadal Climate Variability'

Poster entitled 'Quantifying the Value of Satellite Imagery in Agriculture and Other Sectors', at the American Geophysical Union meeting in San Francisco, CA, on December 9, 2013, with coauthors Philip C. Abbott and Vanessa M. Escobar, in a session entitled 'Assessing Socioeconomic Benefits of Earth Observation Science'.

Invited talk at the Global Precipitation Mission Application meeting held in College Park, MD on November 12-13, 2013. The talk was given at a panel hosted by Dr. Molly Macauley of Resources for the Future entitled 'Ecological Forecasting and Public Health Panel Plenary'. The talk was entitled 'Satellite Precipitation Data, Food Security, and Nutrition Outcomes'.

Presentation given at the Carbon Monitoring System Science Team meeting, held in Pasadena, CA on November 5-7, 2013 entitled 'CMS Applications Initiatives for 2013', coauthored by Vanessa Escobar, Sabrina Delgado-Arias of Sigma Space/NASA and Phillip Abbott, Purdue University.

Invited talk at the USGS Global Croplands Working Group, chaired by Prasad Thenkabail, entitled 'Food Security and Satellite Remote Sensing Data'. The talk was held via webex on August 13, 2013.

Invited talks at the US Department of Agriculture Expert Stakeholder and Author Meeting for the USDA Technical Report on Climate Change and Global Food Security with Implications for the United States, held on June 25-27, 2013 in Reston VA. The talks were entitled 'What is Food Security?' and 'Connecting Food Prices to Environmental Dynamics'.

Invited talk at the NASA Goddard Laboratory for Atmospheres weekly seminar series on July 19, 2013 at GSFC with a talk entitled 'Climate Adaptation Science Investigator Working Group', which reviewed the science and policy activities of climate adaptation at NASA Goddard Greenbelt center.

Attended a 'Remote Sensing Workshop' held on June 7, 2013 at Purdue University focused on identifying the economic benefit to the agriculture and precision farming community of fine resolution, high signal to noise hyperspectral data.

Presentation at the NASA GSFC Facilities Review Committee (FRC) meeting on May 24, 2013 with a talk entitled 'NASA Climate Adaptation Science Investigation (CASI) Workgroup', which describes the work being done at Goddard and Wallops centers to reduce climate vulnerability.

Presentation at the NASA Annual Resources Forum on Thursday, May 24, 2013 entitled 'Global Food Security and Remote Sensing'. The resources forum focuses on providing science and policy information for NASA Goddard's resource analysts and financial managers.

Invited talk at the NASA GSFC Science and Engineering Directorate's Friday seminar on May 3, 2013, entitled 'Integrating glacier melt with stream flow models to assess societal impacts: HIMALA', with collaborators and contributors to HIMALA, including Fritz Policelli and Shahid Habib, NASA GSFC, Sezin Tokar, USAID, Maura Tokay and Joe Nigro, SSAI. From the Universities, David Tarboton and Avirup Sen Gupta, Utah State University and Adina Racoviteanu, Laboratoire de Glaciologie et Géophysique de l'Environnement. Other important contributors were Mandira Shrestha, Sagar Bajracharya, and Samjwal Bajracharya from ICIMOD.

Presentation to Monsanto research division in St Louis, MO presentation entitled 'FARMS: Farmland and Agriculture Remote Measurement Sensor' with Beth Keer, Frank Cepollina and Robert Ritter from Code 408.

Invited talk at the National Forest Service Earth to Sky course, held in Shepardstown West Virginia on February 27, 2013. The talk was entitled 'Climate and Food', and was given to a group of National Park Service employees interested in learning better ways to communicate about climate change with the public. The presentation was repeated via a 'Virtual Collaboration Session' on May 8, 2013.

Keynote Address given at the 4th North American Carbon Program's All Investigator's meeting held in Albuquerque, New Mexico from February 4-7, 2013. The talk was entitled 'Two examples of the successful use of science information in complex multi-actor decision making contexts'.

Poster presentation at the 4th North American Carbon Program's All Investigator's meeting held in Albuquerque, New Mexico from February 4-7, 2013. The poster was entitled' Using Biomass and Carbon information in Decision Making frameworks: Comparing Biome-BGC and i-Tree Eco with coauthors Megan McGroddy, David Nowak, Cristina Milesi, Taylor Keen.

Presentation at the January NASA Goddard 'Engage' session on January 31, 2013 to NASA Goddard Space Flight Center to a broad audience representing the Goddard community. The talk was entitled 'Remote Sensing and Food Security Assessment'.

Presented a seminar at the US Agency for International Development's Famine Early Warning Systems Network Chemonics offices entitled 'Local Food Price Dynamics in the Developing World' with Varun Kshirsagar, World Bank consultant, on January 23, 2013.

2012 Invited talk entitled 'Global Phenological Response to Climate Change in Crop Areas using Satellite Remote Sensing of Vegetation, Humidity and Temperature over 26 years' at the American Geophysical Union meeting in San Francisco, CA, on December 5, 2012, with coauthors Kirsten M. de Beurs and Michael Marshall.

Invited talk by Grace, K., M. Brown and A. McNally entitled 'Maize Prices and Low Birth Weight in Kenya' at the Human Health and Ecosystems Workshop at SESYNC in Annapolis, MD. Presented December 3, 2012.

Invited talk given at the World-Wide Human Geography Data (WWHGD) meeting on November 28, 2012 at the USGS headquarters in Reston, VA. The talk was entitled and was part of the session with the topic of 'Communications for Understanding Diverse Locations'.

Invited talk given at the Longworth House Office building on November 27, 2012, along with Dr. Bradley Doorn and Lawrence Friedl, NASA Headquarters. The event was entitled 'Agriculture & Space: How NASA Supports America's Farmlands'. The talk was entitled 'The Role of Remote Sensing in Agriculture and Food Security Assessment'.

Talk given at the NASA Carbon Monitoring System Phase 1 Science Definition Team meeting, held at NASA Goddard on November 7-9, 2012. The talk, entitled 'Engagement with the User Community' summarizes the work done with CMS over the past two years. Coauthors of the talk include Dr. Molly Macauley and Vanessa Escobar.

Invited talk at the Department of Defense's 6th Annual Strategic Multi-Layer Assessment (SMA) Conference on November 6-8, 2012 entitled 'A World in Transformation: Challenges and Opportunities'. The talk on global food security and satellite remote sensing was part of a panel entitled 'Populations and their Environments: What can Remote Sensing Tell Us about Stability and Reslience?'. Other panel members were Dr. Chuck Ehlshlaeger USACE and Dr. Karen Owen George Mason.

Invited talk at the Association of Ecosystem Research Centers (AERC)'s Congressional Briefing and Research Symposium at the Rayburn Office Building in Washington DC on Thursday October 18th. The talk was entitled 'The Role of Ecosystem Science in Food Security', which was presented both at the congressional briefing and a longer version at the AERC meeting in the afternoon, held at the Ripley Theatre at the Smithsonian.

Talks given at the 2012 USAID Famine Early Warning Systems Network (FEWS NET) Science Meeting, held at the University of Santa Barbara on October 2-3, 2012. The talks were entitled 'Global Phenological Response to Climate in Crop Areas using Humidity and Temperature Models' with K. de Beurs and M. Marshall, and 'Local Staple Food Price Indices and Integration with Biophysical variables' with coauthors from the GEC paper.

Talk on the Soil Moisture Active Passive (SMAP) Applications Mission review at two joint mission workshops, organized by the SMAP Applications Program. The first was at Fairbanks, Alaska from

September 16-17, 2012, and was entitled 'SMAP/ICESat-2 Joint Mission Workshop'. The second workshop was held at the USGS National Center in Reston, VA on October 17-18, and was entitled the 'SMAP/GPM/GRACE-FO/SWOT Joint Mission Tutorial Workshop'.

Invited keynote talk presented at the '2012 Asian Food Heritage Forum', held in Bangkok, Thailand from August 20-21, 2012. The talk was entitled 'Climate change and Food Security: The View from Space'.

Organized a meeting of the HIMALA executive committee at ICIMOD, the International Center for Integrated Mountain Development, in Kathmandu, Nepal from August 23-24, reviewing progress of the project to-date and planning the final year of the NASA-funded program. Attendees included Mandira Shrestha ICIMOD, Shahid Habib NASA, David Tarboton and Avriup Sen Gupta Utah State University, and Paul Hummel AquaTerra Consultants.

Organized a meeting between the University of Maryland's Facilities Environmental, and Arboretum staff members Karen Petroff, Taylor Keen and Josh Nadler, and Biospheric Sciences Laboratory's Chris Neigh and Mark Carroll to discuss collaborative opportunities using the detailed tree observations of over 10,000 trees on campus.

Invited talk presented at the 'Workshop on Defining, Measuring, and Communicating the Socio-economic Benefits of Geospatial Information/GEOSS 2012' held in Boulder Colorado from June 12-14, 2012. The talk was entitled 'Introduction to Remote Sensing Data from Space Systems and Geospatial Data'.

Talk presented at the 'Initiative on Climate Adaptation Research and Understanding through the Social Sciences (ICARUS) conference held at Columbia University, New York May 18-20, 2012. The talk was entitled 'Local Staple Food Price Indices in the Age of Biofuels', with coauthors Tim Essam, K. Leonard, F. Tondel, B. Stabler, G. Eilerts, J. Thorne, B. Mann, V. Kshirsagar.

Talk given at the annual NASA HQ site visit, May 3-4, 2012 at NASA GSFC, briefing Diane Wickland and colleagues at the Biospheric Sciences Branch on recent research. The two talks are entitled 'Global Phenological Response to Climate in Crop Areas using Humidity and Temperature Models' with coauthors K. de Beurs and M. Marshall, and 'Forest Modeling, Climate Adaptation and the BWPFS'.

Poster presented at the 1st annual AGU Science Policy conference, held in Washington DC May 1-2, 2012. The poster was entitled 'New Local, National and Regional Cereal Price Indices for Improved Identification of Food Insecurity', coauthored by F. Tondel, J. Thorne, T. Essam, B.F. Mann, K. Leonard, B. Stabler, G. Eilerts.

Talk at NASA GSFC on April 20, 2012 entitled 'An Introduction to the Climate Adaptation Science Investigator (CASI) Working Group: Key Activities and Objectives' to a diverse audience of Goddard employees from across multiple disciplines.

Invited talk given at the Wellcome Trust in London, UK at a workshop to advise on the Impact of Global Environmental Change on Food/Nutrition and Water in relation to Human Health, held in March 2012. The talk was entitled 'Gaps in Systems to Monitor Food and Agriculture'.

Invited talk at the Johns Hopkins University Department of Earth and Planetary Sciences entitled 'Access to Food and Global Environmental Change', on March 15, 2012.

Talk given at the 2012 Annual Meeting of the Association of American Geographers meeting held from February 24-28, 2012 in New York, NY. The talk was entitled 'Provisioning in Agricultural Communities: Local, Regional and Global Cereal Prices and local food production across three continents' and was coauthored by Fabien Tondel, PhD, Chemonics Internation, Jennifer A Thorne, College of William and Mary, Timothy Essam, University of Maryland, Bristol F Mann, University of Louisville, Gary Eilerts, PhD, USAID.

Invited seminar at George Mason University, Fairfax VA on February 22, 2012 entitled 'Droughts and Decision Making in Famine Early Warning Systems: The Role of Earth Science Data'.

Panel participation at the National Council for Security and the Environment held in Washington DC in January 18-20, 2012. The panel was entitled 'Food Security: Breakout Workshop 08. Remote Sensing, Climate Change, and Food Security: Integrating Data Providers and Users'.

2011 Invited talk entitled 'Understanding the Contribution of Glacier and Snowmelt in the Himalaya using a Spatially-Distributed Energy Balance Model and Remotely Sensed Data: Implications for Water Security in the Himalayas' at the American Geophysical Union meeting in San Francisco, CA, on December 6, 2012, with coauthors Adina Racoviteanu, David G. Tarboton, Samjwal Bajracharya, Guleid A. Artan, Mandira Shrestha, Fritz Policelli, Shahid Habib, Hua Ouyang.

Invited talk entitled 'Index-based Crop Insurance for Climate Adaptation in the Developing World' at the American Geophysical Union meeting in San Francisco, CA, on December 6, 2012, with coauthors Daniel E. Osgood, Miguel A. Carriquiry.

Invited talk at the Global Humanitarian Technology Conference (GHTC) held in Seattle WA from October 30-November 1, 2011. The talk was entitled 'Remote Sensing data and models for improved targeting of humanitarian aid'.

Organized and presented information about applications at the 2nd Soil Moisture Active Passive Applications workshop on October 12-13, 2011 at the US Department of Agriculture's South Building in Washington DC.

Presented the work of the Carbon Monitoring System's Applications efforts at the Carbon Cycle and Ecosystems joint meeting, held in Alexandria VA October 3-7, 2011.

Organized a workshop in collaboration with NASA Headquarters Applied Sciences division and Vanessa Escobar entitled ' Mission Applications Workshop' on September 28-29, 2011.

Talk at the Royal Geographical Society-Institute of British Geographers (RGS-IGB) 2011 annual meeting, entitled 'Famine Early Warning Systems and Remote Sensing Data in Estimates of Food Access', coauthored by E. Brickley, University of Cambridge. The meeting was held in London from August 31 to September 2, 2011.

Presentations on the implications of the NASA Carbon Monitoring System's applications program, presented at the Summer biomass and flux meetings of the CMS science definition team meetings, held in June and July, 2011.

Talk at the annual conference of the Association of American Geographers (AAG) meeting in Seattle, WA from April 12-16, 2011. The research paper was entitled, 'Childhood malnutrition in West Africa: linkages between environment, markets and development' with coauthors Kirsten Johnson of ICF Macro International and Tim Essam, University of Maryland.

Panelist at two panels at the annual conference of the Association of American Geographers (AAG) meeting in Seattle, WA from April 12-16, 2011. The panel entitled 'Beyond the Ivory Tower: Preparing Geographers for Public Sector Careers', focused on opportunities for geographers in federal, state and local government roles. The second panel, 'Climate change and development: Intersections, Contradictions and Opportunities', also included Edward Carr, University of South Carolina, Diana Liverman, University of Oxford, Joni Seager, Bentley University, and Anthony Bebbington, Clark University.

Talk at the NASA Global Drought Monitoring Workshop from April 11-12 in Silver Spring, MD. The talk was entitled 'Soil Moisture Active Passive (SMAP) observations for identifying drought' and was by M.E.Brown, P.O'Neill (NASA), D. Entekhabi (MIT), E. Njoku (JPL) and K. Kellogg (JPL).

Talk at a NASA/USDA workshop entitled 'Evapotranspiration: An Essential Observation for Climate Understanding and Efficient Water Management' from April 5-7 in Silver Spring, MD. The talk was entitled 'SMAP for ET' coauthored by, P.O'Neill (NASA), D. Entekhabi (MIT), E. Njoku (JPL) and K. Kellogg (JPL).

Invited talk at the USGS EROS data center entitled 'HIMALA: Climate Impacts on Glaciers in the Himalayan Region', coauthored by S. Habib (NASA), G. Artan (ASRC/USGS), A. Racoviteanu (University of Colorado), S. Tokar (USAID) and M.Shrestha (ICIMOD) on March 29, 2011 in Sioux Falls, South Dakota.

2010 Poster entitled 'The Response of African Land Surface Phenology to Large Scale Climate Oscillations' coauthored by K.M. de Beurs and A. Vrieling, at the American Geophysical Union Fall meeting on December 14, 2010 in San Francisco, CA.

Poster entitled 'Responsiveness of Food Security Reporting to Environmental Variability and Agricultural Production Deficits' with E.B. Brickley, at the American Geophysical Union Fall meeting on December 14, 2010 in San Francisco, CA.

Invited talk given at a side event at the 16th Conference of the Parties (COP16) meeting in Cancun, Mexico on Thursday, Dec 2, 2010, entitled 'How can Modern and Satellite Technology Contribute to Water and Food Security?' The event was sponsored by the World Bank in Mexico and by Conagua, Mexico, and was moderated and facilitated by Rene Carayol, a regular broadcaster for the BBC.

Invited talk at the University of Oklahoma in Norman, OK for the 'Strategic WaTER Seminar Series' on November 15, 2010. The talk was entitled 'Droughts and Decision Making in Famine Early Warning Systems: The Role of Earth Science Data'.

Organized annual symposium entitled 'Threats to Urban Forest Ecosystems' with the Baltimore-Washington Partners for Forest Stewardship with Christine Conn, Maryland Department of Natural Resources and Gary Allen, Chesapeake Communities on October 28, 2010.

Invited talk given at the International Institute for Applied Systems Analysis in Laxenburg Austria on October 1, 2010. The talk was entitled 'The Use of Satellite Remote Sensing in Food Security Analysis: Integrating Earth Observations into Economic Models'.

Talk given at the 'Global Change and the World's Mountains' international research conference held in Perth, Scotland on September 26-30, 2010. The title of the talk was 'HIMALA: Climate Impacts on Glaciers, Snow and Hydrology in the Himalayan Region', with, S. Habib, G. Artan, S. Tokar and A. Racoviteaneau.

Invited keynote address to the annual meeting of the Mid-Atlantic Plant Molecular Biology meeting, held at Patuxent, MD on August 12-13, 2010. The title of the talk was 'The impact of climate change on agriculture and food security', with C. Funk.

Talk given at the 2010 Annual meeting of the Association of American Geographers on April 16, 2010 in Washington DC entitled 'Political Ecologies of Food Security and Policy: the New Realities of Brittle Food Security' with Brent McCusker.

Panelist at a session entitled 'The Economic Crisis and/in Africa', held at the 2010 Annual meeting of the Association of American Geographers on April 16, 2010 in Washington DC. Other panelists include Godson C. Obia of Eastern Illinois University, Kikombo Ngoy of Kean University and Calvin O. Masilela of Indiana University of Pennsylvania.

Invited talk given to congressional representatives at NASA Goddard, entitled 'Impact of Climate change on Agriculture and Food Security' on March 26, 2010 at NASA Goddard, coauthored by C. Funk and G. Eilerts.

Invited talk given at the graduate research seminar at the Department of Geography, George Mason University, Fairfax, VA, entitled 'Impact of Climate change on Agriculture and Food Security' on March 24, 2010 at NASA Goddard, coauthored by C. Funk and G. Eilerts.

Invited talk given to the MS PhD Program for Earth System Science program on March 16, 2010 entitled 'Impact of Climate change on Agriculture and Food Security' on March 16, 2010 at NASA Goddard, coauthored by C. Funk and G. Eilerts.

Talk presented at the Inter-Agency Forum on Climate Change Impacts and Adaptations', held in Washington DC on March 9, 2010. The talk was entitled 'Monitoring Land, Vegetation and Forest Changes over Time – NASA's New Laser Sensor'.

Invited participation on a panel entitled 'What do we know about climate change in Africa?' at a workshop held on March 3, 2010 in Washington D.C. The workshop was called 'Discussion Forum on Climate Change and African Political Stability'.

Invited talk given to the American Meteorological Society's annual meeting in Atlanta, Georgia from January 23-27, 2010 entitled 'Markets, Climate Change and Food Security in West Africa', co-authored by C. Funk and G. Eilerts (presentation given by G. Eilerts).

Introductory talk on the HIMALA project to ICIMOD team members in Kathmandu, Nepal on January 6, 2010, during project kickoff meeting.

2009 Paper presented at the American Geophysical Union meeting held in San Francisco, CA in December 2009 entitled 'Trends in Agricultural Growing Seasons Due to Climatic Shifts in Africa: Implications for Food Security' by M. E. Brown, K. de Beurs, A. Vrieling

Paper presented at the American Geophysical Union meeting held in San Francisco, CA in December 2009 entitled Climate Change and Famine: Implications for Remote Sensing Applications to Enhance Food Security. L. W. Underwood, M. E. Brown, K. W. Ross (presented by K. Ross)

Demonstration of the use of satellite remote sensing to measure agricultural production in the developing world on November 17, 2009 at the GEO Plenary, Ronald Reagan Building, Washington DC.

Invited talk at the National Institute for Health December 9, 2009 Workshop on Priorities for NIH Research in Climate Change and Health in Bethesda, MD entitled 'Climate Change and Food Security' with C. Funk.

Invited talk at the Demographic Health Survey at Macro International's office in Calverton MD on December 4, 2009 entitled 'Climate Change, Agriculture and Food Security: The Role of Remote Sensing' coauthored by C.C. Funk, B. Hintermann and N. Higgins.

Invited talk at the University of Maryland graduate seminar series on December 3, 2009, entitled 'Climate Change, Agriculture and Food Security: The Role of Remote Sensing'.

Expert participant in the OECD International Futures Program – Focus on Space Economics 7th Meeting of the Working Group, held at the OECD on Friday, November 6, 2009 in Paris France. The talk was entitled 'Remote Sensing of Agriculture: Current and Future Capabilities from Space'

Presented an overview of NASA's investment in food security and famine early warning for the NASA Headquarters' Disasters Management Applied Science Program executives on November 4, 2009. The talk was entitled 'Agriculture and Food Security in the Developing World', with coauthor C. Funk

Invited speaker at the Baltimore-Washington Partnership for Forest Stewardship's 'Climate in the Corridor Workshop', held at the Patuxent Research Refuge National Vistor's Center on October 26, 2009. The talk was entitled 'Monitoring and forecasting changes in Forest Landscapes', coauthored by K. Jon Ranson.

Invited talk at the NASA Water Management Program PI Meeting on September 17 and 18th, 2009 in Adelphi, Maryland. The talk was entitled 'HIMALA: Climate Impacts in the Himalyas', and was coauthored by S. Habib, B. Molnia, G. Artan and S.Tokar.

Invited speaker at a teacher training event at NASA Goddard Space Flight Center organized by Trina Ferrell, Earth Science Education liason on August 5, 2009. Spoke on the topic of 'Famine Early Warning and NASA Data'.

Expert participant at a COST Foresight 2030 workshop held in Bruges, Belgium June 30- July 2, 2009, and gave a talk entitled 'Satellite Remote Sensing and Food Availability Monitoring'.

Invited speaker at the unclassified portion of the Civil Applications Committee (CAC) June 2009 meeting, to give a talk entitled 'Agriculture, Climate and Food Security: Using NASA Earth Science Models and Observations' with coauthors Chris Funk and Jim Verdin.

Invited speaker at a seminar at the Department of State, Washington D.C. on May 18, 2009 entitled 'Agriculture and Food Security: Using NASA Earth Science Models and Observations', with coauthors Chris Funk, Jim Verdin and Scott Paquette. The event was hosted by AAAS intern and former NASA Goddard post-doctoral fellow Ben Zaitchik.

Introductory remarks on the importance of data for a talk entitled 'Physics Mining of Multi-Source Data Sets' by T. Sipes, SciberQuest, Inc and J. Helly, independent consultant, held at NASA Goddard on May 6, 2009. Event co-hosted by Jacqueline Lemoigne-Stewa, code 580.

Invited speaker at the SUNY Albany New York at the fourth annual GIS day celebration on May 5, 2009. The talk was entitled 'Climate Change and the Famine Early Warning System'.

Invited talk at the University of Maryland Earth System Science Interdisciplinary Center's lunch seminar series on April 27, 2009. The talk was entitled 'Food Security, Agriculture and Climate Change'.

Talk at the NASA HQ Carbon and Ecosystems (Terrestrial) GSFC Site Visit on April 21-22, 2009. The talk was entitled 'NDVI Research and Applications', and drew upon research with coauthors Compton J. Tucker, Christopher Funk, Elena Tarnavsky, Sebastien Garrigues and James Verdin.

Invited talk at the NASA Goddard Science and Exploration Directorate Seminar Series on April 3, 2009 entitled 'Agriculture and Food Security in the Developing World', with coauthor Christopher Funk, USGS. Other speakers at the SED Seminar were Edward Masuoka, NASA and Cynthia Rosenzweig, NASA-GISS.

Invited talk to a group of minority Graduate Students visiting NASA Goddard on Tuesday, March 17, 2009. The talk was entitled 'Remote Sensing and Agriculture in the Developing World'.

Paper presented at the Association of American Geographers Annual Meeting, Las Vegas, NV, March 2009 entitled 'Short term Emergency vs Long term development: Decision Making for Improved Outcomes', coauthored by S. Paquette, University of Maryland.

Panelist at the Association of American Geographers Annual Meeting Las Vegas, NV, March 2009, at a panel entitled: 'Emerging Topics in International Development', with Edward Carr, University of South Carolina, Jeffery Bury, University of California Santa Cruz, Brian King, The Pennsylvania State University, and Brent McCusker, West Virginia University.

Invited talk at the NASA Goddard Applications Showcase, March 2009 entitled 'Food Security and Agriculture'

Invited talk at the Library of Congress on March 3, 2009 entitled 'Farming, Food Security and Climate Change' The event was taped and will be Webcast by the Library.

Invited talk to representatives of USAID, USGS and NOAA's International program office on 2/25 entitled 'Global Food Security', at Goddard Space Flight Center, Greenbelt, MD.

Invited talk entitled 'Weather around the World: Agriculture, Data and Food Security' presented to the student pre-conference at the American Meteorological Society meeting in Phoenix, AZ, January 2009.

2008 Paper presented at the American Geophysical Union meeting held in San Francisco, CA in December 2008 entitled 'International Commodity Markets, Local Food Prices and Environment in West Africa' by M E Brown, B Hintermann (UMD), N Higgins (UMD)

Poster at the American Geophysical Union meeting held in San Francisco, CA in December 2008 entitled 'Investigation of FEWS NET Requirements for Earth Observation of Precipitation and Vegetation' by K W Ross (SSAI/NASA), M E Brown, L W Underwood (SSAI/NASA), J P Verdin (USGS).

Poster at the American Geophysical Union meeting held in San Francisco, CA in December 2008 entitled 'Food Security Through the Eyes of AVHRR: Changes and Variability of African Food Production', by A Vrieling (Joint Research Center), K M de Beurs (Virginia Tech), M E Brown

Paper presented at a special symposium at the American Society of Tropical Medicine and Hygiene meeting held in New Orleans, LA in December 2008. The paper was entitled Earth Science Data for Earlier Early Warning: Malaria Early Warning system (MEWS/Famine Early Warning System (FEWS), presented at the symposium entitled 'Predicting and Mitigating Outbreaks of Vector-borne Disease Utilizing Satellite Remote Sensing Technology and Models' and organized by NASA Headquarters. Coauthors on the paper were S. Conner, IRI and J. Verdin, USGS.

Paper presented at the 7th International Conference of the African Association of Remote Sensing of the Environment (AARSE)-2008 Accra, Ghana, in October 2008. The paper was entitled 'Innovative Remote Sensing Analysis for Earlier Early Warning' with coauthors R. Choularton, C. Funk and J.Verdin (presented by S. Habib).

Paper presented at the 2008 Annual meeting of the Middle Atlantic Division of the Association of American Geographers, held in Salisbury, MD on October 25, 2008. The title of the talk was 'Remote Sensing Data and Famine Early Warning Systems'.

Invited talk to the National Academy of Science's Government University Industry Research Roundtable October meeting on the topic of 'Food Security – Global Challenges and Directions', on October 23, 2008. The talk was entitled 'Anticipating Food Shortages using Satellite Data:

examples from the Famine Early Warning Systems Network (FEWS NET)', with coauthors C. Funk and J. Verdin.

Participated in the Earth Institute's International Research Institute for Climate and Society (IRI) Technical Issues in Index Insurance, held in Palisades, NY, October 2008.

Paper presented at the SPIE Conference: Security and Defense, in Cardiff, Wales, UK, September 2008, entitled 'The use of remote sensing-derived biophysical data for early warning of food security crises: evidence from FEWS NET' (given by S. Habib)

Paper presented at the Environmental Information Management 2008 conference, University of New Mexico, September 2008 entitled 'Challenges of AVHRR Vegetation data for Real Time Applications', (given by P. Griffith).

Invited talk to NASA Earth Science Division Director Franco Einaudi and NASA Science Exploration Director Edward Weiler entitled 'Climate Change and Food Security: the Role of NASA Data and Models', Greenbelt, MD, July 2008.

Paper presented at the International Geoscience and Remote Sensing Society meeting, Boston, MA, July 2008 of a paper entitled 'Merging Models with Earth Science Observations for Earlier Famine Early Warning', coauthored by C. Funk, G Galu, R. Choularton, and J. Verdin.

Invited talk at the USGS Eastern Geographic Science Center in Reston, VA on May 7, 2008 entitled 'Observing Network for NASA Goddard's Sustainable Landscape Transformation' with coauthors A. Binstock, B. Zaitchik, C. Neigh, C. Milesi, W. Esaias and F. Irani

Report presented at the Climate Change Impacts Interagency Workgroup Meeting at NASA-Headquarters on April 24, 2008. The talk was entitled 'Climate Change and Food Security: Using Remote Sensing to Anticipate Crises' and was coauthored by C. Funk, G Galu, R. Choularton, and J. Verdin.

Paper presented at the Association of American Geographers Annual Meeting, Boston, MA, April 2008 entitled 'Innovative Climate and Economic Analysis for Earlier Famine Early Warning', coauthored by C. Funk, G Galu, R.Choularton, and J. Verdin.

Panelist at the Association of American Geographers Annual Meeting, Boston, MA, April 2008, at a panel entitled: 'Development Geography and the Human Dimensions of Environmental Change II: Practice', with Kenneth R. Young, University of Texas at Austin, Dianne E. Rocheleau, Clark University, Ben Wisner, Independent Scholar, and Brent McCusker, West Virginia University.

Session Convener at an international conference entitled 'Food Security and Environmental Change' held on April 2-4, 2008 in Oxford, England. The session was entitled 'Improving climate forecasting for food security research'.

Invited talk to the Institute of Zoology at the Zoological Society of London, England, on April 1, 2008 entitled 'Earth Observations and Models for Earlier Famine Early Warning'.

Invited talk to the University Honors Program at Long Island University, Brooklyn, NY, on March 28, 2008 entitled 'Climate Change and Food in Africa'.

Invited talk to the Department of Geology and Geography at the University of West Virginia, Morgantown, WV, on March 15, 2008 entitled 'Earth Observations and Models for Earlier Famine Early Warning'.

Organized a symposium and spoke at the 2008 Annual Meeting of the American Association for the Advancement of Science (AAAS), held in Boston, MA from February 14-18, 2008. The symposium was entitled 'Food Security and Climate Change in Africa', and had three speakers, myself with a talk entitled 'Remote Sensing Data for Food Security Early Warning' and talks by Richard Choularton, Chemonics International and FEWS NET, and Christopher Funk, University of California Santa Barbara.

Participated in a panel at the 8th National Conference on Science, Policy and the Environment, Washington D.C., January 16-18, 2008, with Cristina Rumbaitis del Rio, Rockefeller Foundation, Lakhdar Boukerrou, Florida Atlantic University, James W. Hansen, the Earth Institute at Columbia University, Jennifer Olson, Michigan State University. The panel was entitled 'Climate Change Adaptation for the Developing World: Expanding Africa's Climate Change Resilience'.

2007 Invited talk presented at the 2007 Fall meeting of the American Geophysical Union in San Francisco CA December 10-14, 2007 entitled 'Integrating Earth Observations and Models for Earlier Famine Early Warning', coauthored by C.Funk, J. Verdin, G. Galu and R.Choularton.

Paper presented at the 2007 Fall meeting of the American Geophysical Union in San Francisco CA December 10-14, 2007 entitled 'Conceptual Model linking Land Use to Human Consumption in the Agriculture Sector', coauthored by L. Bounoua and M. Imhoff.

Invited talk for the LIS (Land Information System) Science Seminar Series (Code 613.3) on November 14, 2007 at the NASA Goddard Space Flight Center, entitled 'Incorporating Simulated GPM data into NOAA CPC's Rainfall Estimate Product for USAID' coauthored by G. Husak, T. Love, A. Bennett, E. Wolvovsky, and K. Ross.

Invited talk for the Biospheric Sciences Branch (Code 614.4) Brown Bag Seminar Series on November 1, 2007 at the NASA Goddard Space Flight Center, entitled 'Remote Sensing Innovations for FEWS NET' coauthored by C. Funk, J. Verdin and R. Choularton.

Participated in a panel at the Annual Meeting of the Middle Atlantic Division of the American Association of Geographers held at the US Census Bureau, October 26, 2007. The panel was entitled 'Collaborations, Connections, and Partnerships across the Public-Private divide'.

Poster presented at a conference entitled 'Climate Information: Responding to User Needs', held at the University of Maryland, College Park, MD October 22-23, 2007. The poster was entitled 'Integrating Earth Observations and Model Forecasts for Earlier Famine Early Warning', with coauthors C.C.Funk, G.Galu and R.Choularton.

Invited talk at a seminar entitled 'Integrating Socio-economic and Remote Sensing Information for Food Security and Vulnerability Analysis', held by the European Commission's Joint Research

Council's Agriculture Unit in Ispra, Italy on October 11-12, 2007. The talk was entitled 'Integrating Long Term Vegetation Data Records with Millet Prices in West Africa'.

Invited talk at the Center for Research on Environment and Water (CREW), which is part of the Center for Ocean-Land-Atmosphere Studies (COLA) group, Calverton, MD, June 14, 2007. The talk was entitled 'Leveraging Long Term Vegetation Data Records for Improved Decision Support in Africa'.

Papers presented in two sessions at the International Symposium on Remote Sensing of Environment, held in San Jose, Costa Rica, June 2007. The talks were entitled 'Biophysical remote sensing in a new food security early warning system in Central America', coauthored by L.Aguilar, R.Choularton, and C.Funk, and 'Remote Sensing in the Food Security Early Warning Contingency Planning Process', coauthored by R.Choularton.

Invited talk at the 'Presentation for Egyptian Delegation' by NASA applied research scientists, held at the Department of State, Washington D.C., May 21, 2007. The talk was entitled 'Remote Sensing for Agricultural Monitoring'.

Paper presented at the Association of American Geographers Annual Meeting, San Francisco, CA, April 2007 entitled 'Remote Sensing data in the Food Security Early Warning and Contingency Planning Process', coauthored by R.Choularton.

Panelist in a session at the Association of American Geographers Developing Areas Specialty Group Preconference in Berkeley, CA, April 2007 entitled 'The Politics of the Millennium Development Goals'.

Panelist in two sessions at the Association of American Geographers Annual Meeting, San Francisco, CA, April 2007, entitled: 'Becoming a Writer I: Physical Geography and GIS' and 'Managing environmental uncertainty in development'.

Paper presented at the UN World Meteorological Organization's International Meeting on Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water Services , held in Madrid, Spain, March 19-22, 2007 entitled 'Understanding and Predicting Critical Natural Disasters with Remote Sensing' .

Paper presented at the MODIS Land Collection 5/LTDR Workshop, held in Adelphi, MD January 17-18, 2007 entitled 'Preliminary Comparison between GIMMS, PAL, LTDR AVHRR Datasets', for the Long Term Data Record NASA CAN AVHRR project.

2006 Paper presented at the 2006 Fall meeting of the American Geophysical Union in San Francisco CA December 11-15, 2006 entitled 'Natural Disaster Scenarios in the Food Security Early Warning Contingency Planning Process: the Role of Remotely Sensed Vegetation and Rainfall Data', coauthored by R.Choularton and C.Funk.

Poster presented at the 2006 joint meeting of the Mid-Atlantic and South Eastern Geography Divisions' meeting in Morgantown, West Virginia entitled 'NASA's Applied Science Program Impact in Africa: Leveraging Results for Societal Benefit', coauthored by S. Habib.

Paper presented at the 2006 African Association of Remote Sensing of the Environment (AARSE) Conference in Cairo, Egypt, October 30 to November 2, 2006. The paper was entitled 'Vegetation Monitoring in Semi-Arid Africa for Food Security Early Warning: Integrating Price Observations and NDVI Projections for Earlier Early Warning', co-authored by C.C.Funk.

Paper presented at the biannual MODIS Global Vegetation Workshop pre-conference meeting entitled 'Validation of Global Vegetation Indices and their Time Series' in Missoula, Montana, August 7, 2006. The paper was entitled 'GIMMS NDVIg Dataset: Validation using NDVI from MODIS, SPOT VGT, SeaWiFS and Landsat' co-authored by C.J.Tucker, J.E.Pinzon and E.Pak.

Papers presented at the Spring 2006 American Geophysical Union Fall Meeting in Baltimore, MD: 'Using Neural Nets to Derive Sensor-Independent Climate Quality Vegetation Data: AVHRR and MODIS NDVI Datasets', co-authored by David J. Lary, and 'The Sensitivity of Food Prices to Climate Dynamics in the Markets of Mali, Burkina Faso and Niger', co-authored by J.Pinzon and S.D. Prince, presented at a special session 'The Human Ecological Footprint and Earth's Climate', organized by L.Bounoua and M.Imhoff, Code 614.4.

Paper presented at the Association of American Geographers Annual Meeting, Chicago, IL, March, 2006: 'Biogeography and Livelihoods in Senegal: Community Response to Changing Natural Resource Availability', co-authored by Dr. Luisa Robles-Diaz-de-Leon.

2005 Paper presented at the American Geophysical Union Fall Meeting in San Francisco, December 2005 entitled 'Inter-seasonal NDVI Change Projections for Food Security and Disease Early Warning in Africa' by M.E.Brown and C.C. Funk of the University of California Santa Barbara. Also at this meeting I co-authored a poster entitled 'Multiscale Geostatistical Analysis of AVHRR, SPOT-VGT, and MODIS NDVI products' coauthored by Elena Tarnavsky and Sebastien Garrigues.

Poster presented at the US Climate Change Science Program's Climate Science in Support of Decision Making Workshop, Arlington Virginia, October 2005: 'Multiple Roles of Satellite Data in Livelihood-Based Famine Early Warning for Decision Makers', co-authored by C.C.Funk, T.Boudreau and C.J.Tucker.

Papers presented at two sessions at the 5th Open Meeting of the Human Dimensions of Global Environmental Change Research Community, Bonn, Germany, October 2005: 'Equity issues and the resulting ethical implications of crop and climate forecasts' by M.Brown and C.Ulliasz (Colorado State University), and 'The Impact of Climate Change on Income Diversification and Food Security in Senegal'.

Invited talk for the AAAS Science and Human Rights Workshop, Washington DC, July 2005 entitled 'Early Warning using Scientific Data'.

Paper presented by co-author Shahid Habib, Director of Science Utilization Office, GSFC NASA, at the International Symposium on Remote Sensing of Environment, Saint Petersburg, Russia, June 2005: 'The Famine Early Warning Systems Network.'

Paper presented at the Annual Meeting of the Mid-Atlantic Association of American Geographers, Reston, VA, April 2005: 'The Multiple Roles of NASA Data in Livelihood Based Early Warning of Food Security Crises'.

Paper presented at the Association of American Geographers Annual Meeting, Denver, CO and to the Development Pre-Conference organized by the Developing Areas Specialty Group in Boulder, CO, April 2005: 'Assessing Natural Resource Management and Livelihood Challenges in Senegal using Participatory Rural Appraisal and Remote Sensing'.

2004 Paper presented at the American Geophysical Union Fall Meeting, San Francisco, CA December 2004: 'Inter-Sensor Validation of NDVI time series from AVHRR, SPOT-Vegetation, SeaWIFS, MODIS and LandSAT ETM+'.

Paper presented at International Symposium on Society and Resource Management (ISSRM), Keystone, CO, June 2004: 'Participatory Rural Appraisal in Senegal: Lessons for NGOs on Natural Resource Management from an Analysis of PRA Reports and Techniques'.

Invited Talk presented to Department of Atmospheric Sciences, Colorado State University June 2004: 'An Extended AVHRR 8-km NDVI Data Set Compatible with MODIS and SPOT Vegetation NDVI Data' co-authored by J.E.Pinzon and C.J.Tucker.

Paper presented at the Association of American Geographers Annual Meeting, Philadelphia, PA, March 2004: "The impact on Food Security of Climate Change in Mali, Niger and Burkina Faso", and was a panelist in the session 'Non-Academic Career Opportunities for Geographers'.

Panelist in a session at the Association of American Geographers Annual Meeting, Philadelphia, PA, March 2004: 'Non-Academic Career Opportunities for Geographers'

2003 Paper presented at the conference entitled Mitigating and Adapting Human Dimensions of Climate Change held at Ohio State University, October, 2003: 'Impact on Food Security of Extreme Climatic Change in Three Sahelian Countries" co-authored by J.E.Pinzon and S.D.Prince.

Paper presented at the Society for Industrial and Applied Mathematics (SIAM) in June, 2003: 'Quantitative spatial and temporal assessment of four NDVI-AVHRR global data sets for land applications' co-authored by J.E.Pinzon, and C.J.Tucker.

2002 Paper presented at the Association of American Geographers Annual Meeting, Los Angeles, CA, March 2002: "The impact of biophysical conditions on food prices in three Sahelian countries".

2001 Poster presented at the American Geophysical Union Fall Meeting, San Francisco, CA, November 2001: "Satellite-Measured Variations in Photosynthetic Capacity and Rainfall in Sahelian and Sudanian Africa from 1980 to 2000" co-authored by C.J.Tucker, A.Anyamba.

Poster presented at the European Geophysical Society Meeting, Nice, France, June 2001: "Modeling the NDVI-Rainfall Relationship", co-authored by J. Pinzon, C.J. Tucker, and S. Nicholson.

AWARDS

2016 USDA Abraham Lincoln Honor Award for Increasing Global Food Security for the Climate Change, Global Food Security, and the US Food System writing team

2013 Women in Aerospace (WIA) Outstanding Achievement Award. The citation reads for "her continued work in bringing critical information to the U.S. Government in the area of remote sensing and as an expert on impact of environmental dynamics of food security."

2010 NOAA David Johnson Award National Space Club award for young scientists who are finding new and innovative ways to enhance or redefine the use of Earth observation data for inclusion in NOAA operations.

2008 NASA Robert H. Goddard Honor Science Award

NASA Group Achievement Award, as a part of the Goddard Applied Sciences Team

2007 Science Systems and Applications Incorporated (SSAI) Performance Award

2006 African Association of Remote Sensing of the Environment-European Space Agency Best Paper presentation award at the AARSE meeting, Cairo, Egypt

Science Systems and Applications Incorporated (SSAI) Publication Award

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GRANTS

NASA Transform to Open Science Training
Period: 2023-2025
Role: Co-Investigator, Arthur Endsley University of Montana PI
Title: Satellite observations and models informing agriculture: Training for open science under climate change.
Amount: 3% of time, $195,000

ICESat-2 Mission at NASA Goddard Space Flight Center
Period: 2021-2023
Role: Principal Investigator
Title: ICESat-2 Applications Team Lead supporting the Applications program
Amount: 25% of time, $58,000

NASA Land Use Land Cover Change
Period: 2021-2023
Title: The Impact of Investment on Irrigated Rice, Dryland Agriculture and Afforestation in Senegal using SAR and Optical Time-Series Imagery in Data Fusion Approaches
Role: Institutional PI (PI: Christopher Neigh, GSFC)
Funding Agency: NASA
Amount: 20% of time, $40,000

Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification (SIIL)
Period: 2020-2024
Title: Geospatial, Farming Systems, and Digital Tools Consortium – building a new era of Predictive Agricultural Innovation to improve the livelihood of smallholder farmers
Role: Institutional PI (Prime Ignacio Ciampitti, Kansas State University)

Funding Agency: USAID
Amount: 30% of time, $50,000

NASA Interdisciplinary Science (IDS) Grant
Period: 2020-2023
Title: The impact of urban expansion on peri-urban agriculture, hydrometeorology, food security, and human health
Role: Co-Investigator (PI: Christopher Hain, Marshall Space Flight Center)
Funding Agency: NASA
Amount: 30% of time, $50,000

NASA Carbon Monitoring System 2018
Period: 2020-2022
Title: Continuation of CMS Applications Efforts: Stakeholder Engagement and Socioeconomic Studies on the Value of CMS Data Products for User Organizations
Role: Institutional Investigator (PI: Vanessa Escobar, NOAA)
Funding Agency: NASA
Amount: 40% of time, $80,000

Lead Author of the Food Systems Chapter for the Global Commission on Adaptation report
Period: 2019
Funding Agency: World Resources Institute and the German Government
Amount: 30% of time, $50,000

NASA Food Security and Agriculture Consortium (FSAC): NASA Harvest
Period: 2017-2021
Funding Agency: NASA Applied Sciences Division
Amount: collaborator, no funding

Modelling Early Risk Indicators to Anticipate Malnutrition (MERIAM) Action Against Hunger-University of Maryland-Johns Hopkins University project
Period: 2017-2021
Funding Agency: United Kingdom's Department of International Development (DFID)
Amount: 28% of effort over five years

INFEWS T1/Understanding multi-scale resilience options for climate-vulnerable Africa
Period: 2016-2020
Role: Co-Investigator (PI: Ben Zaitchik Johns Hopkins University)
Funding Agency: NSF INFEWS/T1 Grant 2016
Amount: 13% of time, $128,218 over four years

Carbon Monitoring System 2016
Period: 2016-2019
Role: Co-Investigator (PI: Jeff Masek NASA GSFC)
Title: CMS Applications: Stakeholder Engagement and Impact Assessment of CMS Products on Decision Making and Policy Frameworks
Amount: 15% of time, $97,462 over three years

USDA Economic and Research Service (ERS) cooperative agreement
Period: 2015-2016
Role: Principal Investigator
Title: Understanding Environmental Correlates to Understand country-level drivers of Food Security Risk Perception from the Gallup Project
Amount: 20% of time, $20,000

NASA Topical Workshops, Symposia and Conferences
Period: 2015-2016
Role: Principal Investigator, co-Investigator Vanessa Escobar, SSAI/NASA
Title: Science Community Familiarization and Engagement with Applications in the NASA Mission Life Cycle
Amount: 45% of time, $96,000

USGS-UCSB Grant from the Famine Early Warning Systems Network
Period: 2015-2016
Role: Principal Investigator
Title: Development of Zambia and Ethiopia Climate Fact Sheets
Amount: 20% of time, $20,000

ICESat-2 Mission at NASA Goddard Space Flight Center
Period: 2015-2021
Role: Principal Investigator
Title: ICESat-2 Applications Team Lead supporting the Applications program
Amount: 25% of time, $58,000

Carbon Monitoring System Science Team ROSES 2014
Period: October 2014 – September 2015
Role: Co-Investigator, Ralph Dubayah UMD is the PI
Title: High-Resolution Carbon Monitoring and Modeling
Amount: $120,000 over three years

Advancing Collaborative Connections for Earth System Science (ACCESS), ROSES 2013 A36
Period: May 2014-April 2015
Role: Principal Investigator
Title: NASA Earth Science Data Products for AGRA Farmer Management and Agro-Input Cell Phone Systems
Amount: $385,000 over two years

Carbon Cycle Science ROSES 2013 A5
Period: October 2013 – September 2015
Role: Co-Investigator, Ralph Dubayah UMD is the PI
Title: An MRV System for EcoMarket Infrastructure
Amount: 0.2 FTE, $150,000 over three years

Interdisciplinary Research in Earth Science, ROSES 2013 A32
Period: January 2013 – December 2015

Role: Principal Investigator
Title: Linking Remote Sensing Data and Energy Balance Models for a Scalable Agriculture Insurance System for sub-Saharan Africa
Amount: 0.2 FTE, $1,300,000 over three years

Carbon Monitoring System Phase 2b Science Team
Period: August 2013 – October 2015
Role: Principal Investigator
Title: Linking Carbon Cycle Science to Policy and Management Decisions
Amount: $800,000 over three years

Mission Latency Study for NASA Headquarters Lead
Period: September 2012 to October 2013
Role: Study lead
Budget: $110,000 over one year

SMAP Applications Team Lead
Period: 2010-2015
Role: Applications Program Coordinator
Budget: 1.2 FTEs per year over the life of the mission

ICESat-2 Applications Team Lead
Period: 2012-2015
Role: Applications Program Coordinator
Budget: 1.2 FTEs per year over the life of the mission

NASA Carbon Monitoring System Science Definition Team and Extension
Period: April 2011-December 2013
Role: SDT member and PI on applications activities
Title: Carbon Monitoring Systems Applications 2011
Budget: 0.2 FTE $75,000 over 18 months, $165,000 for applications activities

NASA Carbon Cycle and Ecosystems Grant
Period: October 2009-January 2011
Role: Principal Investigator, Co-Is: J. Tucker/NASA, K. De Beurs/VTech, M. Marshall/UCSB, C. Funk/USGS
Title: Global Length of Growing Season Changes over 30 years and their Impact on Agriculture and Food Production
Budget: $70,000

NASA Feasibility Grant ROSES 2008 A19
Period: 8/2009-12/2010
Role: Principal Investigator
Title: Cereal price forecasting in West Africa using NASA Satellite Remote Sensing
Amount: 0.1 FTE for two years, total $110,000

NASA Applied Sciences Decisions ROSES 2008 A18

Period: 8/2009-12/2014
Role: Principal Investigator, Co-PI: S. Habib, NASA Goddard and others
Title: HIMALA: Climate Impacts on Glaciers in the Himalaya Region
Amount: 0.4 FTE for four years, total $1.4 K

NASA Applied Sciences Decisions ROSES 2008 A18
Period: 8/2009-12/2014
Role: Co-Investigator, PI: J. Verdin USGS with Co-I C. Peters-Liddard
Title: A Land Data Assimilation System for Famine Early Warning
Amount: 0.2 FTE for four years

UMD Grant from the Chesapeake Bay Forecast System to be a Data User
Period: 4/2009 - 3/2010
Role: Principal Investigator
Title: 'Proposal to be a Pilot Application of the Chesapeake Bay Forecast System'
Amount: 0.13 FTE for one year, total grant amount $35,000 for one year

NASA Applied Sciences Grant 2006
Period: 10/2006 - 9/2009
Role: Principal Investigator
Title: 'Interdisciplinary Model Implementation for Prices in Africa'
Amount: 0.1 FTE of my time, total grant amount $28,000 for two years

IGBP START PACOM Small Grant for African Global Change Researchers
(US National Science Foundation / US Climate Change Science Program)
Date Awarded: 6/2007
Role: Co-Principal Investigator, PI: Aliou Dia, Scientist, University of Dakar, Senegal
Proposal Opportunity: Small Research Grants for African Global Change Scientists
Title: 'Adapting to Climate Variability in the Senegal River Basin in West Africa'
Amount: no salary support, total grant $13,000

NASA Rapid Prototyping Capability Grant
Period: 5/2007 - 10/2007
Role: Principal Investigator with Compton J. Tucker as manager
Proposal Opportunity: Internally competed proposal opportunity
Title: 'Precipitation Products for USAID Disaster Management Requirements'
Amount: 0.45 FTE of my time, total grant amount $77,997 for six months

NASA Applied Sciences Decisions CAN Grant
Period: 10/2006 - 9/2009
Role: PI on funded project, NASA ultimately combined with another project.
Co-PI with James Verdin (USGS) and Stephen Connor, Ph.D (Columbia Univ)
Proposal Opportunity: Decisions CAN proposal: NRA NNH04ZYO010C,
Title: 'Enhancing USAID Famine and Malaria Early Warning with NASA Earth Science Results'
Amount: 0.3 FTE of my time, total grant amount $1.4 million for three years

Task Lead on International Sustainable Development Project
Period: 2006-2008

Role: Task Lead, leading a group of four from SSAI and UMD ESSIC
Funded by: NASA Disasters Applied Sciences Focus Area, Shahid Habib
Amount: 0.3 FTE of my time, direct funding

NASA Education Grant
Period: 7/2005 – 7/2006
Role: Co-I. PI: Douglas Reardon, Coppin State, Co-I: Eric Kasischke, UMD College Park, Co-I: Molly Brown, GSFC NASA
Proposal Opportunity: NASA Education NRA: 04-0010-0045
Title: 'Inspiring the Eagles: A proposal to strengthen Coppin State University's Capacity in Geography and Geospatial Science Applications'
Amount: 0.05 FTE of my time, total grant $267,000

UMD Research Grant 1998
Received a grant from the University of Maryland's Committee for the African Diaspora to visit Senegal to research the use of Participatory Rural Appraisal (PRA) as a primary data source, June 1998, $1000. The papers in World Development and in Land Change Science on PRA are the result of this grant.

PROFESSIONAL MEMBERSHIPS

2004-present The American Geophysical Union (AGU)
2007-2015 American Association for the Advancement of Science (AAAS)
1998-2009 The American Association of Geographers (AAG)
2011-2012 IEEE Geoscience and Remote Sensing Society (IGARSS)
2005-2007 African Association of Remote Sensing of the Environment

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PROFESSIONAL TRAINING

2011 NASA Science Principle Investigator Training
2010 Smith College Executive Education 'From Specialist to Strategist: For Women in Science, Technology and Engineering'
2009 NASA Road to Mission Success training

SUPERVISION AND MENTORING

2022

- Walid Ouaret, Department of Geographical Sciences Doctoral committee doctoral committee, co-chair with Tatiana Loboda

2021

- Lydia O'Meara, doctoral student at the Food and Markets Department, Natural Resources Institute, University of Greenwich, Mentoring role
- Hannah Liddy, Columbia University, Future Earth, Mentoring role

2020

- Fatima Younis, Political Science Department, undergraduate intern
- Matthew Cooper, Department of Geographical Sciences Doctoral committee, co-chair with Matt Hansen

2018

- Wesley Anderson, Earth and Environmental Sciences, Columbia University, served as a doctoral defense reviewer.

2017

- Nayoung Jo, Department of Geographical Sciences, served on her doctoral thesis committee

2016

- Jennifer Hinojosa, Department of Geographical Sciences, served on her doctoral thesis committee.
- Nathan Burtch, Department of Geographical Sciences, served on his doctoral thesis committee

2015

- Modibo Haidara, Department of Geographical Sciences, undergraduate intern
- Rachel Hittich, Department of Agricultural Economics, Purdue University, funded her masters degree in that focused on a benchmarking analysis of the value of Carbon Monitoring System (CMS) forest canopy data for the state of Maryland's forestry programs.

2014

- Lindsey Wright and Michael Farhner, undergraduates at University of Maryland College Park, worked on a hydrology and rainfall intensification project at NASA GSFC
- Megan Rosenberger, undergraduate at the US Coast Guard cadet, worked on understanding the need for sea ice information in the navy for decision makers in the arena of navigation.
- Alfred Hubbard, undergraduate at the University of Virginia, extended the hydrology project for the Climate Adaptation Science Investigation working group. Currently employed at NASA Goddard with SSAI.

2013

- Noel Stewart, undergraduate at the University of Montana, worked on a hydrology and rainfall intensification project in collaboration with Gary Jedlovec, Marshall Space Flight Center
- Monica Ilhi, undergraduate at the University of Tennessee, worked on developing a semantic and relational analysis of the North America Carbon Program's research abstract database.
- Platon Lukyanenko, undergraduate at the University of Maryland Applied Mathematics department.

2012

- Kirk Silver, undergraduate with University of Rhode Island's Watershed Hydrology Laboratory, now a scientist at Woodard & Curran
- Krishnan Rajagopalan undergraduate at the US Naval Academy.

2011

- Timothy Essam, USAID GeoCenter, finishing his doctorate at the University of Maryland AREC department in August 2013. I provided funding for Tim for the final three years of his doctoral project.
- Jennifer Thorne, undergraduate with College of William and Mary
- Bristol Mann, undergraduate with University of St. Louis

2010

- Prajjwal Panday, Clark University, internship during his final years as a doctoral student.
- Elizabeth Brickley, undergraduate with Smith College, currently doing her doctorate at Cambridge University as an NIH/Oxford/Cambridge fellow.

2009

- Dongchul Kim, Universities Space Research Association, during his work at NASA Goddard with the Atmospheric Sciences department as an undergraduate

2008

- Beat Hintermann and Nathaniel Higgins, doctoral students at the Agriculture and Resource Economics, University of Maryland College Park, provided hourly funding during the last year of their doctoral program to develop an econometric model for the Sahel

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VOLUNTEER POSITIONS

Crossfield Elementary School 'Girls Excelling in Math and Science' GEMS program advisor 2012

NASA's National Consortium for Graduate Degrees for Minorities in Engineering and Science (GEM) advisor and mentor, 2009

MS PhD's Professional Development Program mentor, 2010

Participant at Goddard Space Flight Center's Earth Day in 2009, 2010, 2011

PROFESSIONAL SERVICE

Associate Editor for the Oxford Open Climate Change journal, a new journal launched in 2020, with Editor in Chief Eelco Rohling

Member of the NASA Carbon Monitoring System Phase 2 Report writing team representing stakeholder and Monitoring Reporting and Validation (MRV) activities for the program, 2019 - 2021

Co-chair for the North American Carbon Program (NACP) Implementation plan, to be issued 2022. Lead author of the 'Decision Support' chapter.

Member of the National Academy of Sciences (NAS) Committee on Earth Science and Applications from Space member, 2017 - 2022

Member of the Scientific and Technical Advisory Council for 'Menus of Change', sponsored by the Culinary Institute of America Harvard T.H. Chan School of Public Health—Department of Nutrition, 2016-2021.

Member of the Editorial Board of the Journal of Land Use Science, 2014-2021

Member of the University of Maryland Research Faculty Promotions Task Force Meeting, 2018

Editor in Chief of Elsevier journal Remote Sensing Applications: Society and Environment, 2015-2017.

Lead author of a USDA Technical report entitled Climate Change, Global Food Security, and the US Food System', publication date fall 2015, as part of the National Climate Assessment process

Member of the Coordination Group on Meteorological Satellites Working Group III Tiger team on Socio-Economic Benefits (CGMS) 2013-2015. The group focuses on improving inter-agency coordination on estimating the value of satellite data. The group has members from NOAA, USGS, the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), Japan Meteorological Agency, and World Meteorological Organization.

NASA
Member of the NASA Colloquium Committee, 2010-2013.
Member of NASA Goddard Code 600 Deputy Director's Council on Science, 2007-2009.

Member of the Organizing Committee for a National Academy of Sciences workshop entitled 'Urban Forestry: Toward an Ecosystem Services Research Agenda' that was held on February 25-26, 2013 at the Keck Center of the National Academies.

Member of the National Science Foundation (NSF) Environmental Research and Education Advisory Committee (ERE-AC), 2010-2012

Member of USAID's Famine Early Warning Systems Network Team Leader's Committee (2004-2010)

Member of the American Association for the Advancement of Science (AAAS) Coalition on Human Rights, representing the Association of American Geographers (2007-2008)

American Geophysical Union
Secretary of the Global Environmental Change Focus Group

Association of American Geographers
Member of the AAG Governmental Data and Employment Committee (2010-2013)
Secretary of the Development Geography Specialty Group (2009-2011)
AAG Regional Councilor, 2007-2010
Member of the International Research and Scholarly Exchange Committee
AAG representative on the AAAS Committee on Human Rights
AAG Middle Atlantic Region chapter: Chair 2006-2007, Vice-Chair 2005-2007, Treasurer 2003-2005
AAG Developing Areas Specialty Group: Secretary/Treasurer 2005-present.
AAG Tellers Committee member, 2005
Member of the Judging Committee of the AAG Remote Sensing Specialty Group's student paper competition, 2005.

Review papers for

- ACS Environmental Science and Technology
- Agriculture, Ecosystems and Environment
- Climatic Change

- Cogent Engineering
- Earth's Future
- Environmental Conservation
- Environment, Development and Sustainability
- Environmental Management
- Environmental Monitoring and Assessment
- Environmental Monitoring and Software – Atmospheres
- Environmental Research Letters
- Food Security Journal
- Frontiers in Public Health
- Geophysical Research Letters
- Global Change Biology
- Global Food Security
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- IEEE Transactions on Geoscience and Remote Sensing
- International Journal of Remote Sensing
- JGR Atmospheres
- Journal of Applied Remote Sensing
- Journal of Arid Lands
- The Lancet
- Natural Hazards
- Oecologia
- Nature
- Nature Climate Change
- Nature Communications
- Photogrammetric Engineering and Remote Sensing
- PLoS ONE
- Population and Environment
- Remote Sensing Journal
- Remote Sensing of Environment
- World Development