

**Alessandra Giannini**  
**Ecole Normale Supérieure—PSL**  
24, Rue Lhomond, 75231 PARIS CEDEX 05, France

A climate scientist with over 15 years of engagement in international collaboration in scientific research and in science-policy dialogues, especially in Africa. Research interests include the *dynamics of tropical climate* (drought and recovery in the Sahel; monsoons and climate change; the El Niño-Southern Oscillation and its teleconnections; El Niño as an analogue in climate change); the *impact of climate on society* (desertification and re-greening in the Sahel; climate sensitivity of food security); and *scientific communication* (teaching climate change in high school as an interdisciplinary endeavor; the role of scientific knowledge in policy and practice).

### Education

*February 2001 - PhD in Earth and Environmental Sciences*, Columbia University in the City of New York  
*March 1995 - Laurea in Physics*, Università degli Studi di Milano, Italy

### Professional experience

*December 2020 to present: Professeure des Universités—Planète Vivante, Milieux Humains*; Adjunct Senior Research Scientist, International Research Institute for Climate and Society, Columbia University

*April 2003 to November 2020: Columbia University in the City of New York—Associate Research Scientist* (April 2003-June 2010), *Research Scientist* (July 2010-August 2018), *Senior Research Scientist* (September 2018-November 2020) in the *International Research Institute for Climate and Society (IRI)*; *Chercheure en Météorologie, Laboratoire de Météorologie Dynamique* (December 2018-August 2020); *Adjunct Professor in the Department of Earth and Environmental Sciences, Graduate School of Arts and Sciences* (July 2011-November 2020); *Adjunct Professor in the School of International and Public Affairs* (Spring 2009, 2010, 2012)

*November 2012-present: Visiting Professor in the Institute of Climate and Society, Mekelle University, Ethiopia*

*January 2001 to April 2003: Postdoctoral Fellow in the Advanced Study Program, National Center for Atmospheric Research (NCAR), Boulder, CO, U.S.A.*

**Member** American Geophysical Union, American Meteorological Society, European Geophysical Union

### Honors and awards

Laureate of *Make Our Planet Great Again*, President Emmanuel Macron's initiative to support climate change research (2017)

Nominee, 11th Excellence in Mentoring Award, Lamont-Doherty Earth Observatory (2015)

NSF Faculty Early Career Development Award (CAREER) (2010-2015)

NCAR Advanced Study Program Post-doctoral Fellowship (2001-2003)

### Fifteen minutes of fame

Related to the *Make Our Planet Great Again* award: Interviews with Elisabeth Pain for *Science Magazine*, 11 December 2017; Steven Mufson for the *Washington Post*, 11 December 2017; Thomas Baietto, for *franceinfo.fr*, 11 December 2017; Carlo Grande for *La Stampa's Tuttoscienze*, 27 March 2018; Simon Roger for *Le Monde*, 31 May 2018; Jingnan Peng for *Christian Science Monitor*, 20 September 2019; and Suzanne Krause for *Deutschlandfunk*, 17 October 2019.

2014 Climate models calendar—<http://climatemodels.org/>

Related to publication of Giannini *et al.* 2003 in *Science Magazine*: Letter to the editor of *The New Yorker* on "Desert rains", 30 January 2012; Interviews with Stephan Faris, for *The Atlantic Monthly*, April 2007; with Peter N. Spotts, for the *Christian Science Monitor*, 20 November 2003; with *BBC's Science in Action*, 14 October 2003; and with Sylvie Coyaud, for *Radio24's Il volo delle oche - in viaggio colla scienza*, 13 October 2003

**Selected peer-reviewed publications**

*Metrics* (02/06/2021): **ORCID ID** <https://orcid.org/0000-0001-5425-4995>; **Scopus Author ID** 35616612800: 57 documents, 4025 total citations by 3130 documents, 236 co-authors, h-index = 24; **Thomson-Reuters Researcher ID** F-7163-2016: 49 publications, with average citations per article = 69.8, h-index = 25; **google scholar**: 5364 citations, h-index = 31

1. Ilboudo Nébié, E. K., D. Ba and A. Giannini, 2021. Food security and climate shocks in Senegal: Who and where are the most vulnerable households? *Global Food Security*, in press
2. Giannini, A., A. Ali, C. P. Kelley, B. L. Lamptey, B. Minoungou and O. Ndiaye, 2020. Advances in the lead time of prediction of Sahel rainfall with the North American Multi-Model Ensemble. *Geophys. Res. Lett.*, **47**, e2020GL087341, <https://doi.org/10.1029/2020GL087341>
3. Giannini, A. and A. Kaplan, 2019. The role of aerosols and greenhouse gases in Sahel drought and recovery. *Climatic Change*, **152**, 449-466, doi: 10.1007/s10584-018-2341-9
4. Giannini, A., B. Lyon, R. Seager and N. Vigaud, 2018. Dynamical and thermodynamic elements of modeled climate change at the East African margin of convection. *Geophys. Res. Lett.*, **45**, 992-1000, doi: 10.1002/2017GL075486
5. Giannini, A., P. K. Krishnamurthy, R. Cousin, N. Labidi and R. J. Choullarton, 2017. Climate risk and food security in Mali: a historical perspective on adaptation. *Earth's Future*, **5**, 144-157, doi: 10.1002/2016EF000404
6. Stith, M.-M., A. Giannini, J. del Corral, S. Adamo and A. de Sherbinin, 2016. A quantitative evaluation of the multiple narratives of the recent Sahelian "re-greening". *Weather, Climate and Society*, **8**, 67-83, doi: <http://dx.doi.org/10.1175/WCAS-D-15-0012.1>
7. Orlove, B. S., H. Lazrus, G. K. Hovelsrud and A. Giannini, 2014. Recognitions and responsibilities: on the origins and consequences of the uneven attention to climate change around the world. *Current Anthropology*, **55**, 249-275, doi:10.1086/676298
8. Giannini, A., S. Salack, T. Lodoun, A. Ali, A. T. Gaye and O. Ndiaye, 2013. A unifying view of climate change in the Sahel linking intra-seasonal, interannual and longer time scales. *Environmental Research Letters*, **8**, 024010, doi:10.1088/1748-9326/8/2/024010
9. Seth, A., S. A. Rauscher, M. Rojas, A. Giannini and S. J. Camargo, 2011. Enhanced spring convective barrier for monsoons in a warmer world? A letter. *Climatic Change*, **104**, 403-414, doi:10.1007/s10584-010-9973-8
10. Giannini, A., 2010. Mechanisms of climate change in the semi-arid African Sahel: the local view. *J. Climate*, **23**, 743-756, doi:10.1175/2009JCLI3123.1
11. Giannini, A., M. Biasutti, I. M. Held and A. H. Sobel, 2008. A global perspective on African climate. *Climatic Change*, **90**, 359-383, doi:10.1007/s10584-008-9396-y
12. Tippett, M. K. and A. Giannini, 2006. Potentially predictable components of African summer rainfall in a SST-forced GCM simulation. *J. Climate*, **19**, 3133-3144, doi:10.1175/JCLI3779.1
13. Biasutti, M. and A. Giannini, 2006. Robust Sahel drying in response to late 20th century forcings. *Geophys. Res. Lett.*, **33**, L11706, doi:10.1029/2006GL026067
14. Giannini, A., R. Saravanan and P. Chang, 2003. Oceanic forcing of Sahel rainfall on interannual to interdecadal time scales. *Science*, **302**, 1027-1030. Published online 9 October 2003. doi:10.1126/science.1089357
15. Giannini, A., Y. Kushnir and M. A. Cane, 2000. Interannual variability of Caribbean rainfall, ENSO and the Atlantic Ocean. *J. Climate*, **13**, 297-311, doi: [http://dx.doi.org/10.1175/1520-0442\(2000\)013<0297:IVOCRE>2.0.CO;2](http://dx.doi.org/10.1175/1520-0442(2000)013<0297:IVOCRE>2.0.CO;2)

### Grants as Principal Investigator

*PRODUCT—Process-based Diagnostics of Uncertainty in Climate change projections in the Tropics*; Agence Nationale de la Recherche (December 15, 2018 to December 14, 2023—€749,758)

*Desertification or “re-greening”? Adaptation lessons learned in coping with late 20th century drought in West Africa*; NASA/ROSES SERVIR Applied Sciences Team (July 16, 2016 to July 15, 2019—\$720,000)

*CAREER—Characterizing the uncertainty in projections of climate change in the semi-arid tropics based on the moist static energy framework*; National Science Foundation (September 1, 2010 to August 31, 2017—\$744,000)

*Sustainable development in the Sahel—learning from the recent greening*; Earth Institute Cross-cutting Initiative (September 1, 2009 to December 31, 2011—\$37,000).

### Advising/mentoring of early-career scholars

**Rebecca Herman** - PhD candidate in Earth and Environmental Sciences, Columbia University (on-going)

**Elisabeth Kago Ilboudo-Nébié** - Earth Institute post-doctoral fellow (July 2018-June 2020)

**Pradipta Parhi** - PhD candidate in Earth and Environmental Engineering, Columbia University (2020)

**Mame Diarra Bousso Dieng** - PhD candidate in the École Supérieure Polytechnique of Université Cheikh Anta Diop de Dakar (external examiner, 2018)

**Catherine Pomposi** - PhD candidate in Earth and Environmental Sciences, Columbia University (2017)

**Ellen Dyer** - PhD candidate in the Physics Department, University of Toronto (external examiner, 2016)

**Abubakr A. M. Salih** - PhD candidate in the Meteorological Institute of Stockholm University (thesis defense faculty opponent, 2015)

**Alexis Berg** - National Science Foundation post-doctoral fellow (2014-2015)

**Teddy Allen** - PhD candidate in the Rosenstiel School of Marine and Atmospheric Sciences, University of Miami (external examiner, 2014)

**Claudine Wenhaji-Ndomeni** - PhD candidate in Science and Management of Climate change, Cà Foscari University, Venice, Italy (supervisor during a required 3-month internship abroad, 2014)

**Seyni Salack** - 2012 Global Change System for Analysis Research and Training (START) Partnership Enhancement Award (supervisor)

**Marta Vicarelli** - PhD candidate in Sustainable Development, Columbia University (2011)

### Peer-reviewing

Editor, *Geophysical Research Letters* (January 2019—)

Reviewer for publications in *African Geographical Review, African Journal of Environmental Science and Technology, Agricultural Systems, Annales Geophysicae, Bulletin of the American Meteorological Society, Cahiers Agricultures, Climate Dynamics, Climatic Change, Current Anthropology, Earth System Dynamics, Environmental Research Letters, Environmental Reviews, Environmental Science and Policy, Erdkunde, Geofizika, Geophysical Research Letters, Global Environmental Change, International Journal of Climatology, Journal of Climate, Journal of Geophysical Research, Journal of Hydrometeorology, Land Degradation and Development, Meteorologische Zeitschrift, Natural Hazards, Nature Climate Change, Nature Communications, Nature Geoscience, Ocean-Atmosphere, Science, Scientific Reports, Singapore Journal of Tropical Geography, Tellus, Theoretical and Applied Climatology, Water Resources Research and Weather and Climate Extremes*

Reviewer for the NRC Research Associateship Program of the National Academies (since 2014)

Reviewer for proposals submitted to the US National Science Foundation, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, to the French National Research Agency (ANR), to the Research Council for Culture and Society of the Academy of Finland, to the Netherlands Science Council (NWO), to the Canadian International Development Research Centre (IDRC/CRDI), and to the Belmont Forum.

**Community service** Faculty representative on Columbia University's *Advisory Committee on Socially Responsible Investment* and chair of the fossil fuel divestment sub-committee (September 2013-May 2016): in March 2017, the Trustees of Columbia University announced their support for ACSRI's recommendation to divest from companies deriving more than 35% of their revenue from thermal coal production and to participate in the Carbon Disclosure Project's Climate Change Program.