

**JERRY MICHAEL MELILLO**

The Ecosystems Center  
Marine Biological Laboratory  
Woods Hole, Massachusetts 02543  
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**Education:** Ph.D., Yale University, New Haven, Connecticut, 1972-1977  
M.F.S., Yale University, New Haven, Connecticut, 1970-1972  
M.A.T., Wesleyan University, Middletown, Connecticut, 1967-1968  
B.A., Wesleyan University, Middletown, Connecticut, 1961-1965

**Experience:**

The Ecosystems Center, Marine Biological Laboratory, Woods Hole, 1976-Present  
Distinguished Scientist, 2010-present; Director Emeritus, The Ecosystems Center 2010-present  
Co-Director, 1989-2009; Acting Director, 1988-1989  
Senior Scientist, 1987-2009; Associate Scientist, 1982-1987; Assistant Scientist, 1976-1982  
Professor of Biology, Brown University, 2003-Present  
Associate Director for Environment, Office of Science and Technology Policy, Office of the President,  
Washington, DC, 1996-1997  
Director, Ecosystems Studies Program, National Science Foundation, Washington, DC, 1986-1988  
Associate in Research, Hubbard Brook Ecosystem Study, Yale University, New Haven, CT, 1975-1976  
Teaching Assistant, January Ecology Course, Marine Biological Laboratory, Woods Hole, MA, January  
1975  
Teaching Assistant in Soils, Yale University, New Haven, CT, 1973-1975  
Biology Instructor, Foote School, New Haven, CT, 1972-1973  
Biology Instructor, Weston High School, Weston, CT, 1968-1973  
Biology Instructor, Kakamega Secondary School, Kakamega, Kenya (East Africa), 1966-1967

**Honors, Offices, Boards:**

**Honors -**

Distinguished Alumni Award, Yale School of Forestry and Environmental Studies – 2017  
Member, National Academy of Sciences – 2014  
Fellow, ESA – 2012  
Co-recipient (IPCC), Nobel Peace Prize – 2009  
Fellow, American Academy of Arts and Sciences – 2007  
Fellow, AAAS – 2007  
Fellow, American Philosophical Society – 2005  
Honorary Professor, Institute of Geophysical Sciences and Natural Resources Research, Chinese  
Academy of Sciences – 2000  
Member, Cosmos Club – 1998  
Award of Excellence in Ecosystem Science, Natural Resources Ecology Laboratory, Colorado State  
University – 1997  
Distinguished Alumni Award, Wesleyan University – 1995  
Member, Sigma Xi – 1977

**Offices -**

President, Ecological Society of America, 2004-2005  
President, Scientific Committee on Problems of the Environment, 1998-2004  
Vice Chair, International Geosphere-Biosphere Programme, 1994-1999

**Boards – (selected)**

Trustee, Cary Institute of Ecosystem Studies, 2009-present

Trustee, University Corporation for Atmospheric Research, 2009-2016

Trustee, National Ecological Observation Network (NEON), 2007-2009

Trustee, The H. John Heinz III Center for Science, Economics and the Environment, 2004-2010

Trustee, Marine Biological Laboratory, 1990-1992

**Advisory Committees (current)**

NAS – Gulf Research Program (chair)

NAS – US Global Change Research Program

NAS – US National Member Organization for IIASA

NAS – Board on International Scientific Organizations

DOE - Biological and Environmental Research Advisory Committee

EviEM – Mistra Council for Evidence-based Environmental Management (Sweden)

**Professional Society Memberships:**

American Geophysical Union

Ecological Society of America

National Association for the Advancement of Science

**Publications:**

- Sub.** Li, J, G. Wang, M.A. Mayes, S.D. Allison, S.D. Frey, Z. Shi, X. Hu, Y Luo, J.M. Melillo. 2017. Reduced carbon use efficiency and increased microbial turnover with two-decades of soil warming. *Nature Climate Change* (submitted).
- Svensson, B.M., B.Å. Carlsson, J.M. Melillo. 2017. Changes in vegetation cover after seven years of elevated atmospheric CO<sub>2</sub> and warming in a subarctic birch forest understory, as modified by rodent and moth outbreaks. *PeerJ* (submitted).
- 2017** Melillo, J.M., S.D. Frey, K.M. DeAngelis, W. Werner, M.J. Bernard, F.P. Bowles, G. Pold, M.A. Knorr, A.S. Grandy. 2017. Long-term Pattern and Magnitude of Soil Carbon Feedback to the Climate System in a Warming World. *Science*. 358:101-105.
- Mayes, J. Mustard, John; J. Melillo, C. Neill; G. Nyadzi. 2017. Going beyond the green: senesced vegetation material predicts basal area and biomass in remote sensing of tree cover conditions in an African tropical dry forest (Miombo Woodland) landscape. *Environmental Research Letters*. (in press)
- Pold, G., A.S. Grandy, J.M. Melillo, K.M. DeAngelis. 2017. Changes in substrate availability drive carbon cycle response to chronic warming. *Soil Biol. Biochem.* doi:10.1016/j.soilbio.2017.03.002.
- 2016** Melillo, J.M., X. Lu, D.W. Kicklighter, J. Reilly, Y. Cai, A.P. Sokolov. 2016. Protected Areas' Role in Climate-Change Mitigation. *AMBIO*. 45(2), 133-145. DOI 10.1007/s13280-015-0693-1.
- Carey, J.C., J. Tang, P.H. Templer, K.D. Kroeger, T.W. Crowther, A. Burton, J.S. Dukes, B. Emmett, S. Frey, M. Hessel, L. Jiang, M. Machmuller, J E. Mohan, A.M. Panetta, P.B. Reich, S. Reinsch, X. Wang, S. D. Allison, C. Bamminger, S.D. Bridgham<sup>r,s</sup>, S. L. Collins, G. de Dato, W.C. Eddy, B.J. Enquist, M. Estiarte, J. Harte, A. Henderson, B.R. Johnson, K.S. Larsen, Y. Luo, S. Marhan<sup>q</sup>, J. Melillo, J. Peñuelas<sup>x,y</sup>, L. Pfeifer-Meister, C. Poll, E.B. Rastetter<sup>a</sup>, A. Reinmann, L.L. Reynolds, I. K. Schmidt, G.R. Shaver, A.L. Strong, V. Suseela, A.Tietema. 2016. Temperature response of soil respiration largely unaltered with experimental warming. *PNAS* doi:10.1073/pnas.1605365113.
- Durán, J., J. Morse, P. Groffman, G. Likens, J. Melillo, M. Vadeboncouer, T. Fahey, C. Driscoll, M. Fisk, P. Templer, J. Campbell, M. Mitchell. 2016. "Climate change decreases nitrogen pools and mineralization rates in northern hardwood forests. *Ecosphere* 7(3):e01251. 10.1002/ecs2.1251.

- Jiang, Y., Q. Zhuang, S. Sitch, J.A. O'Donnell, D. Kicklighter, A. Sokolov, J. Melillo. 2016. Importance of soil thermal regime in terrestrial ecosystem carbon dynamics in the circumpolar north. *Global and Planetary Change*. 142:28–40. DOI: 10.1016/j.gloplacha.2016.04.011
- Jin, Z. Q. Zhuang, Z. Tan, J. Dukes, B. Zheng, J. Melillo. 2016. Do maize models capture the impacts of heat and drought stresses on yield? Using algorithm ensembles to identify successful approaches. *GBC*. 22:3112-26. doi: 10.1111/gcb.13376.
- Moser, S.C. J.M. Melillo, K.L. Jacobs, R.H. Moss and J.L. Buizer. 2016. Aspirations and common tensions: larger lessons from the third US national climate assessment. *Climatic Change*. 135:187–201 DOI 10.1007/s10584-015-1530.
- Reilly, J.M. and J.M. Melillo Climate and Land: Tradeoffs and Opportunities. 2016. *Geoinformatics & Geostatistics: An Overview*. 4:1-2. dx.doi.org/10.4172/2327-4581.1000135
- Taylor, B., A.E. Patterson, M. Ajayi, R. Arkebauer, K. Bao, N. Bray, R.M. Elliott, P. Gauthier, J. Gersony, R. Gibson, M. Guerin, S. Lavenhar, C. Leland, L. Lemordant, E. Liao, J. Melillo, R. Oliver, C.M. Prager, W. Schuster, N. Schwartz, C. Shen, K. P. Trlizzi, K. Griffin. 2016. Growth and physiology of a dominant understory shrub, *Hamamelis virginiana*, following canopy disturbance in a temperate hardwood forest. *Canadian Journal of Forest Research*. (in press).
- Tian, H., C. Lu, P. Ciais, A.M. Michalak, J.G. Canadell, E. Saikawa, D.N. Huntzinger, K.R. Gurney, S. Sitch, B. Zhang, J. Yang, P. Bousquet, L. Bruhwiler, G. Chen, E. Dlugokencky, P. Friedlingstein, J. Melillo, S. Pan, B. Poulter, R. Prinn, M. Saunois, C.R. Schwalm, S.C. Wofsy. 2016. The terrestrial biosphere as a net source of greenhouse gases to the atmosphere. *Nature* (in press) DOI 10.1038/nature16946
- Tian, H., W. Ren, B. Tao, G. Sun, A. Chappelka, X. Wang, S. Pan, J. Yang, J. Liu, B. Felzer, J. Melillo, and J. Reilly. 2016. Climate extremes and ozone pollution: a growing threat to China's food security. *Ecosystem Health and Sustainability*. 2(1):e01203. doi: 10.1002/ehs2.1203 doi: 10.1002/ehs2.1203
- Zhuang, Q., X. Zhu, Xudong; Y. He, C. Prigent, J. Melillo, A. McGuire, R. Prinn, D. Kicklighter. 2016. Influence of Changes in Wetland Inundation Extent on Net Fluxes of Carbon Dioxide and Methane in Northern High Latitudes from 1993 to 2004. *Environmental Research Letters* (in press).
- 2015** Melillo, J.M. 2015. Climate Change, *Risky Business*, and a Call to Action for Ecologists. *Ecosystem Health and Sustainability*. 1:art3. <http://dx.doi.org/10.1890/EHS14-0016.1>
- DeAngelis, K.M. G. Pold, B. D Topcuoglu, L. T. A. van Diepen, R. M. Varney, J. Blanchard, J. Melillo, S. Frey. 2015. Long-term forest soil warming alters microbial communities in temperate forest soils. *Frontiers in Microbiology* 6:104, doi: 10.3389/fmicb.2015.00104.
- Mayes, M., J. Mustard, J. Melillo. 2015. Land cover dynamics of an African dry tropical forest: assessments of forest cover change and variability with linear spectral mixture analysis in a developing Miombo Woodland. *Remote Sensing of Environment* 165:203-212. [doi:10.1016/j.rse.2015.05.006](https://doi.org/10.1016/j.rse.2015.05.006)
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- Lu, X., D.W. Kicklighter, J.M. Melillo, J.M. Reilly. 2015. Land Carbon Sequestration within the Conterminous United States: Regional- and State-level Analyses. *Journal of Geophysical Research – Biogeosciences*. 120 (2), 379-398. DOI: 10.1002/2014JG002818
- Pold, G., K.M. DeAngelis, J.M. Melillo. 2015. Two decades of warming increases diversity of a potentially lignolytic bacterial community. *Frontiers in Microbiology*. <http://dx.doi.org/10.3389/fmicb.2015.00480>
- 2014** Melillo, J.M., T.C. Richmond and G.W. Yohe, eds. 2014. *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program, 841 pp., doi: 10.7930/J0Z31WJ2.
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- Hayes, D.J., D.W. Kicklighter, A.D. McGuire, M. Chen, Q. Zhuang, F. Yuan, J.M. Melillo and S.D. Wullschleger. 2014. The impacts of recent permafrost thaw on land-atmosphere greenhouse gas exchange. *Environmental Research Letters* 9:045005, doi:10.1088/1748-9326/9/4/045005.
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- 2013** Frey, S.D., J. Lee, J.M. Melillo and J. Six. 2013. Soil carbon cycling: The temperature response of microbial efficiency and its feedback to climate. *Nature Climate Change* 3:395-398, doi: 10.1038/nclimate1796.
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- Liu, X., Q. Zhuang, M. Chen, Z. Pan, N. Tchebakova, A. Sokolow, D. Kicklighter, J.M. Melillo, A. Sirin, G. Zhou, Y. He, J. Chen, L. Bowling, D. Miralles and E. Parfenova. 2013. Response of evapotranspiration and water availability to changing climate and land cover on the Mongolian Plateau during the 21<sup>st</sup> century. *Global and Planetary Change* 108:85-99, doi: 10.1016/j.gloplacha.2013.06.008.

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- 2012** Berbeco, M., J.M. Melillo and C. Orians. 2012. Soil warming differentially accelerates decomposition of woody debris. *Plant and Soil* 356:405-417, doi: 10.1007/s11104-012-1130-x.
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- Butler, S.M., J.M. Melillo, J.E. Johnson, J. Mohan, P.A. Steudler, H. Lux, E. Burrows, C.L. Vario, T.D. Hill, N. Aponte and F. Bowles. 2012. Soil warming changes the nitrogen cycle: nitrogen-driven changes in species composition. *Oecologia* 168:819-828, doi: 10.1007/s00442-011-2133.
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- Jiang, Y., Q. Zhuang, S. Schaphoff, S. Sitch, A. Sokolov, D. Kicklighter and J. Melillo. 2012. Uncertainty analysis of vegetation distribution in the northern high latitudes during the 21<sup>st</sup> century with a dynamic vegetation and model. *Ecology and Evolution* 2(3):503-614. doi: 10.1002/ece3.85.
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- 2011** Melillo, J.M., S.M. Butler, J.E. Johnson, J. Mohan, P.A. Steudler, H. Lux, E. Burrows, F. Bowles, R. Smith, L. Scott, C.L. Vario, T.D. Hill, A.J. Burton, Y. Zhou and J. Tang. 2011. Soil warming, carbon-nitrogen interactions, and forest carbon budgets. *PNAS* 108(23):9508-9512, doi: 10.1073/pnas.1018189108.
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- Galford, G.L., J.M. Melillo, D.W. Kicklighter, J.F. Mustard, T.W. Cronin, C.E.P. Cerri and C.C. Cerri. 2011. Historical carbon emissions and uptake from the agricultural frontier of the Brazilian Amazon. *Ecological Applications* 21:750-763, doi: 10.1890/09-1957.1.

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- 2010** Melillo, J.M., D.W. Kicklighter, H. Tian and S. Butler. 2010. Fertilizing Change: Carbon-nitrogen interactions and carbon storage in land ecosystems. In: D. Hillel and C. Rosenzweig (eds.), *Handbook of Climate Change and Agroecosystems: Impacts, Adaptation, and Mitigation*. Imperial College Press. London. 438pp.
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**h-factor** (April 2017) – all, 124; since 2012, 73