

CV: Mary E. Whelan

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Research Interests

biosphere-atmosphere interactions, novel approaches for estimating land carbon uptake

Education

Ph.D., Geography, University of California, Berkeley	2013 Fall
Terrestrial-Atmospheric Exchange of Reduced Sulfur Compounds in Natural Ecosystems	
B.A., honors, Chemistry/Political Science, New College of Florida	2004 Spring

Appointments

<i>Assistant Professor</i>	Fall 2019-
Department of Environmental Sciences, Rutgers University	
<i>Postdoctoral Researcher</i>	2017-2019
Department of Atmospheric and Ocean Sciences, UC Los Angeles	
<i>NSF Postdoctoral Research Fellow</i>	2015-2017
NSF Atmospheric and Geospace Sciences, Carnegie Institute	
<i>Postdoctoral Scholar</i>	2014-2017
Sierra Nevada Research Institute, joint appointment with Lawrence Livermore National Laboratory	
<i>Instructor/Researcher</i>	2013-2015
Future Scientists Improving the Public's Climate Literacy Lawrence Hall of Science, NSF Geoscience Education Grant	

Honors and Awards

AGU Biogeosciences Caregiver Award	2018
Postdoctoral Innovation Award, Carnegie Institution for Science	2017
NSF Atmospheric and Geospace Sciences Postdoctoral Fellowship	2015-2017
Janet Witter Award for Environmental Science Research	2013
Outstanding Graduate Student Instructor Award	2012

Grants Funded

Soil exchange of carbonyl sulfide (COS): towards an independent proxy for terrestrial gross primary production (GPP) NSF Postdoctoral Fellowship, NSF Atmospheric and Geospace Sciences, 2015-2017

New Estimates of Terrestrial Carbon and Water Fluxes by Combining the Carbonyl Sulfide-Stomatal Conductance Tracer Framework and High Resolution Surface Data, NASA ECOSTRESS Science Team, 2020-2022.

Scientific Management Experience

Maintains communications for international collaboration of carbon cycle researchers using carbonyl sulfide (cosanova.org) since 2015. Organizes annual AGU-adjacent research meetings.

Selected Publications

Whelan, ME, TW Hilton, JA Berry, M Berkelhammer, AR Desai, and JE Campbell: Carbonyl sulfide exchange in soils for better estimates of ecosystem carbon uptake, *Atmospheric Chemistry and Physics*, 2016.

Hilton, TW, **ME Whelan**, A Zumkehr, S Kulkarni, JA Berry, I Baker, SA Montzka, C Sweeney, BR Miller, JE Campbell: Peak growing season gross uptake of carbon in North America is largest in the Midwest, USA, *Nature Climate Change*, 2017.

Whelan, ME, ST Lennartz, TE Gimeno, R Wehr, G Wohlfahrt, Y Wang, L Kooijmans, TW Hilton, S Belviso, P Peylin, R Commane, W Sun, H Chen, L Kuai, I Mammarella, K Maseyk, M Berkelhammer, K-F Li, D Yakir, A Zumkehr, Y Katayama, J Ogée, FM Spielmann, F Kitz, B Rastogi, J Kesselmeier, J Marshall, K-M Erkkilä, L Wingate, LK Meredith, W He, R Bunk, T Launois, T Vesala, JA Schmidt, CG Fichot, U Seibt, S Saleska, ES Saltzman, SA Montzka, JA Berry, and JE Campbell: Reviews and Syntheses: Carbonyl Sulfide as a Multi-scale Tracer for Carbon and Water Cycles, *Biogeosciences*, 2018.

Whelan, ME, LDL Anderegg, G Badgley, JE Campbell, R Commane, C Frankenberg, TW Hilton, L Kuai, N Parazoo, Y Shiga, Y Wang, J Worden: Two Scientific Communities Striving for a Common Cause: innovations in carbon cycle science, *Bulletin of the American Meteorological Society*, 2020.

Berkelhammer, M, B Alsip, R Matamala, D Cook, **ME Whelan**, C Bernacchi, J Miller, T Meyers: Seasonal evolution of canopy stomatal conductance for a prairie and maize field in the midwestern US from continuous carbonyl sulfide fluxes, *GRL*, 2020.

Maignan, F, C Abadie, M Remaud, LMJ Kooijmans, K Kohonen, R Commane, R Wehr, JE Campbell, S Belviso, SA Montzka, N Raoult, U Seibt, YP Shiga, N Vuichard, **ME Whelan**, P Peylin: Carbonyl Sulfide: Comparing a Mechanistic Representation of the Vegetation Uptake in a Land Surface Model and the Leaf Relative Uptake Approach, *Biogeosciences*, 2021.

Hu, L, S Montzka, A Kaushik, A Andrews, C Sweeney, J Miller, I Baker, S Denning, E Campbell, Y Shiga, P Tans, C Siso, M Crotwell, K McKain, K Thoning, B Hall, I Vimont, J Elkins, **ME Whelan**, P Suntharalingam: Gross primary production over the North American Arctic and Boreal region inferred from atmospheric carbonyl sulfide measurements, *PNAS*, 2021.

Villalba, G, **ME Whelan**, S Montzka, P Cameron-Smith, M Fischer, A Zumkehr, T Hilton, J Stinecipher, I Baker, RP Bambha, HA Michelsen, B LaFranchi, C Estruch, E Campbell: Using carbonyl sulfide to track the urban biosphere signal. *JGR-Atmospheres*, 2021.

Kooijmans, LMJ, A Cho, J Ma, A Kaushik, KD Haynes, I Baker, IT Luijkx, M Groenink, W Peters, JB Miller, JA Berry, J Ogée, LK Meredith, W Sun, KM Kohonen, T Vesala, I Mammarella, H Chen, FM Spielmann, G Wohlfahrt, M Berkelhammer, **ME Whelan**, K Maseyk, U Seibt, R Commane, R Wehr, M Krol: Evaluation of carbonyl sulfide biosphere exchange in the Simple Biosphere Model (SiB4). *Biogeosciences*, 2021.