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Education:

2017 Ph.D. Atmospheric Sciences, Cornell University (CU), Ithaca, NY
Minors in Fluid Dynamics and Environmental Engineering
2016 M.S. Atmospheric Sciences, Cornell University, Ithaca, NY
2014 M.S. Geological Sciences – Atmospheric Science, Indiana University (IU), Bloomington, IN
2012 B.S. Meteorology, *Summa Cum Laude*, Northern Illinois University (NIU), Dekalb, IL.
Minor in Geography, Geographic Information Systems Certification
2010 A.S. William Rainey Harper College, Palatine, IL

Professional experience:

2019-Present: **Assistant Atmospheric Scientist**, Environmental Science Division (EVS), Argonne National Laboratory (ANL)
2019-Present: **Lead Instrument Mentor,** Energy balance Bowen ratio (EBBR), eddy correlation flux measurement (ECOR), and surface energy balance (SEBS) systems
Associate Instrument Mentor, Soil Temperature and Moisture Profile (STAMP) systems, U.S. Department of Energy's (DOE) Atmospheric Radiation Measurement (ARM) user facility
2019-Present: **PI**, AmeriFlux sites: US-A10 ARM-NSA-Barrow (doi:10.17190/AMF/1498753) and US-A03 ARM-AMF3-Oliktok (doi:10.17190/AMF/1498752), DOE AmeriFlux
2017-2019: **Postdoctoral Appointee - Atmospheric Science**, EVS, ANL
2017-2019: **Associate Instrument Mentor**, EBBR, ECOR, and SEBS, DOE ARM user facility
2014-2017: **NASA Earth and Space Science Fellow**, Department of Earth and Atmospheric Sciences, Cornell University
Summer 2016: **Alternate Sponsored Fellow**, Atmospheric Sciences & Global Change Division, Pacific Northwest National Laboratory
2013-2014: **Research Assistant**, Indiana University
Summer 2013: **Quality Assurance Intern**, Indiana Department of Environmental Management, Office of Air Quality, Air Monitoring Branch
2012-2013: **Associate Instructor**, Indiana University
Summer 2012: **Student Research Aid**, ARM Climate Research Facility, Argonne National Laboratory
2011-2012: **Undergraduate Research Apprentice**, Northern Illinois University
Summer 2011: **Environmental Meteorologist Intern**, Environmental Applications Division, Murray & Trettel Inc.

Peer-reviewed publications:

McNicol, G., Irvin, J., Zhou, S., Lu, F., Liu, V., Fluet-Chouinard, E., Ouyang, Z., Knox, S. H., Lucas-Moffat, A., Trotta, C., Papale, D., Vitale, D., Mammarella, I., Avati, A., Kondrich, A., Ng, A., Rey-Sanchez, A. C., Valach, A. C., Richardson, A. D., Kalhori, A., Lohila, A., Malhotra, A., Noormets, A., Desai, A. R., Mitra, B., Runkle, B. R. K., Helfter, C., Sturtevant, C., Baldocchi, D., Campbell, D. I., Lai, D. Y. F., Zona, D., Euskirchen, E., Ward, E. J., Stuart-Haëntjens, E., Bohrer, G., Jurasinski, G., Vourlitis, G., J., Wong, G. X., Chu, H., Iwata, H., Dalmagro, H. J., Chen, J., Delwiche, K. B., Hemes, K. S., Schäfer, K. V. R., Merbold, L., Aurela, M., Nilsson, M. B., Goeckede, M., Helbig, M., Heimann, M., Peichl, M., Ueyama, M., Sonnentag, O., Alekseychik, P., Vargas, R., Bansal, S., Feron, S., Hirano, T., Jacotot, A., Sakabe, A., Varlagin, A., Wille, C., Szutu, D. J., Billesbach, D. P., Schuur, E. A., Nemitz, E., Tuittila, E-S., Parmentier, F., J., Koebsch, F., Celis, G., Dolman, H., Verfaillie, J. G., Goodrich, J. P., Fuchs, K., Kasak, K., Ono, K., Hörtnagl, L., Alberto, M. C. R., Gondwe, M. J.,

Gottschalk, P., Oikawa, P. Y., **Sullivan, R. C.**, Maier, R., Shortt, R., Gogo, S., Friborg, T., Morin, T. H., Sachs, T., Oechel, W. C., Windham-Myers, L., Poulter, B., and Jackson R. B. (in review). Gap-filling eddy covariance methane fluxes: Comparison of machine learning model predictions and uncertainties at FLUXNET-CH4 wetlands. Submitted to *Agricultural and Forest Meteorology*.

Dorigo, W., Himmelbauer, I., Aberer, D., Schremmer, L., Petrakovic, I., Zappa, L., Preimesberger, W., Xaver, A., Annor, F., Ardö, J., Baldocchi, D., Blöschl, F., Bogena, H., Brocca, L. Calvet, J-C., Camarero, J. J., Capello, G., Choi, M., Cosh, M. C., Demarty, J., van de Giesen, N., Hajdu, I., Jensen, K. H., Kanniah, K. D., de Kat, I., Kirchengast, G., Rai, P. K., Kyrouac, J., Larson, K., Liu, S., Loew, A., Moghaddam, M., Fernández, J. M., Bader, C. M., Morbidelli, R., Musial, J., Osenga, E., Palecki, M. A., Powers, J., Ikonen, J., Robock, A., Rüdiger, C., Rummel, U., Strobel, M., Su, Z., **Sullivan, R.,** Tagesson, T., Walker, J., Wigneron, J-P., Woods, M., Yang, K., Zhang, X., Zreda, M., Dietrich, S., Gruber, A., van Oevelen, P., Wagner, W., Scipal, K., Drusch, M., and Sabia, R. (2021). The International Soil Moisture Network: serving Earth system science for over a decade. Under review at *Hydrology and Earth System Sciences Discussions*. doi:10.5194/hess-2021-2

Delwiche, K. B., Knox, S. H., Malhotra, A., Fluet-Chouinard, E., McNicol, G., Feron, S., Ouyang, Z., Papale, D., Trotta, C., Canfora, E., Cheah, Y., Christianson, D., Alberto, M. C. R., Alekseychik, P., Aurela, M., Baldocchi, D., Bansal, S., Billesbach, D. P., Bohrer, G., Bracho, R., Buchmann, N., Campbell, D. I., Celis, G., Chen, J., Chen, W., Chu, H., Dalmagro, H. J., Dengel, S., Desai, A. R., Detto, M., Dolman, H., Eichelmann, E., Euskirchen, E., Famulari, D., Friborg, T., Fuchs, K., Goeckede, M., Gogo, S., Gondwe, M. J., Goodrich, J. P., Gottschalk, P., Graham, S. L., Heimann, M., Helbig, M., Helfter, C., Hemes, K. S., Hirano, T., Hollinger, D., Hörtnagl, L., Iwata, H., Jacotot, A., Jansen, J., Jurasinski, G., Kang, M., Kasak, K., King, J., Klatt, J., Koebsch, F., Krauss, K. W., Lai, D. Y. F., Mammarella, I., Manca, G., Marchesini, L. B., Matthes, J. H., Maximon, T., Merbold, L., Mitra, B., Morin, T. H., Nemitz, E., Nilsson, M. B., Niu, S., Oechel, W. C., Oikawa, P. Y., Ono, K., Peichl, M., Peltola, O., Reba, M. L., Richardson, A. D., Riley, W., Runkle, B. R. K., Ryu, Y., Sachs, T., Sakabe, A., Sanchez, C. R., Schuur, E. A., Schäfer, K. V. R., Sonnentag, O., Sparks, J. P., Stuart-Haëntjens, E., Sturtevant, C., **Sullivan, R. C.**, Szutu, D. J., Thom, J. E., Torn, M. S., Tuittila, E., Turner, J., Ueyama, M., Valach, A. C., Vargas, R., Varlagin, A., Vazquez-Lule, A., Verfaillie, J. G., Vesala, T., Vourlitis, G., L., Ward, E. J., Wille, C., Wohlfahrt, G., Wong, G. X., Zhang, Z., Zona, D., Windham-Myers, L., Poulter, B., and Jackson, R. B. (2021). FLUXNET-CH4: A global, multi-ecosystem database and analysis of methane seasonality from freshwater wetlands. Under review at *Earth System Science Data Discussions*. doi:10.5194/essd-2020-307

Helbig, M., Gerken, T., Beamesderfer, E., Baldocchi, D. D., Banerjee, T., Biraud, S. C., Brown, W. O. J., Brunsell, N. A., Burakowski, W. A., Burns, S. P., Butterworth. B. J., Chan, W. S., Davis, K. J., Desai, A. R., Fuentes, J. D., Hollinger, D. Y., Kljun, N., Mauder, M., Novick, K. A., Perkins, J. M., Rahn, D. A., Rey-Sanchez, C., Santanello, J. A., Scott, R. L., Seyednasrollahm, B., Stoy, P. C., **Sullivan, R. C.**, Vilà-Guerau de Arellano, J., Wharton, S., Yi, C., and Richardson, A. D. (in review). Integrating continuous atmospheric boundary layer and tower-based flux measurements to advance understanding of land-atmosphere interactions. Submitted to *Agricultural and Forest Meteorology*.

Chu, H., Luo, X., Ouyang, Z., Ouyang, Z., Chan, S., Dengel, S., Biraud, S. C., Torn, M. S., Metzger. S., Kumar, J., Arain, M. A., Arkebauer, T. J., Baldocchi, D., Bernacchi, C., Billesbach, D., Black, T. A., Blanken, P. D., Bohrer, G., Bracho, R., Brown, S., Brunsell, N.A., Chen, J., Chen, X., Clark, K., Desai, A. R., Duman, T., Durden, D., Fares, S., Forbrich, I., Gamon, J., Gough, C. M., Griffis, T., Helbig, M., Hollinger, D., Humphreys, E., Ikawa, H., Iwata, H., Ju, Y., Knowles. J. F., Knox, S., Kobayashi, H., Kolb, T., Law, B., Lee, X., Litvak, M., Liu, H., Munger, J. W., Noormets, A., Novick, K., Oberbauer, S., Oechel, W., Oikawa, P., Papuga, S. A., Pendall, E., Prajapati, P., Prueger, J., Quinton, W. L., Richardson, A. D., Russell, E. S., Scott, R. L., Starr, G., Staebler, R., Stoy, P. C., Stuart-Haëntjens, E., Sonnentag, O., **Sullivan, R. C.**, Suyker, A., Ueyama, M., Vargas, R., Wood, J. D., and Zona, D. (2021). Representativeness of eddy-covariance flux footprints for areas surrounding AmeriFlux sites. *Agricultural and Forest Meteorology*. *301-302*, 108350. doi:10.1016/j.agrformet.2021.108350

Bao, T., Xu, X., Jia, G., Billesbach, D. P., and **Sullivan, R. C.** (2020). Much stronger tundra methane emissions during autumn-freeze than spring-thaw. *Global Change Biology*. *27*, 376–387. doi:10.1111/gcb.15421

Sullivan, R. C., Kotamarthi, V. R., and Feng, Y. (2019). Recovering evapotranspiration trends from biased CMIP5 simulations and sensitivity to changing climate over North America (2019). *Journal of Hydrometeorology, 20*(8), 1619–1633. doi:10.1175/JHM-D-18-0259.1

Crippa, P., **Sullivan, R. C.**, Thota, A., and Pryor, S. C. (2019). Sensitivity of simulated aerosol properties over eastern North America to WRF-Chem parameterizations. *Journal of Geophysical Research: Atmospheres, 124*(6), 3365-3383. doi:10.1029/2018JD029900

Tang, S., Xie, S., Zhang, M., Tang, Q., Zhang, Y., Klein, S. A., Cook, D. R., and **Sullivan, R. C.** (2019). Differences in eddy-correlation and energy-balance surface turbulent heat flux measurements and their impacts on the large-scale forcing fields at the ARM SGP site. *Journal of Geophysical Research: Atmospheres, 124*(6), 3301-3318. doi:10.1029/2018JD029689

Sullivan, R. C., Cook, D. R., Ghate, V. P., Kotamarthi, V. R., and Feng, Y. (2019). Improved spatiotemporal representativeness and bias reduction of satellite-based evapotranspiration retrievals via use of in situ meteorology and constrained canopy surface resistance. *Journal of Geophysical Research: Biogeosciences, 124*(2), 342-352. doi:10.1029/2018JG004744

Sullivan, R. C., Crippa, P., Matsui, H., Leung, L. Y. R., Zhao, C., Thota, A., and Pryor, S. C. (2018). New particle formation leads to cloud dimming. *Npj Climate and Atmospheric Science*, *1*(1). doi:10.1038/s41612-018-0019-7

Sullivan, R. C., Levy, R. C., da Silva, A. M., and Pryor, S. C. (2017). Developing and diagnosing climate change indicators of regional aerosol optical properties. *Scientific Reports*, *7*:18093. doi:10.1038/s41598-017-18402-x

Pryor, S. C., **Sullivan, R. C.**, and Schoof J. T. (2017). Modeling the contributions of global air temperature, synoptic-scale phenomena and soil moisture to near-surface static energy variability using artificial neural networks. *Atmospheric Chemistry and Physics*, *17*(23), 14457-14471. doi:10.5194/acp-17-14457-2017

Crippa, P., **Sullivan, R. C.**, Thota, A., and Pryor, S. C. (2017). The impact of resolution on meteorological, chemical and aerosol properties in regional simulations with WRF-Chem. *Atmospheric Chemistry and Physics*, *17*, 1511–1528. doi:10.5194/acp-17-1511-2017

Sullivan, R. C., Crippa, P., Hallar A. G., Clarisse, L., Whitburn, S., Van Damme, M., Leaitch, W. R., Walker, J., Khlystov, A., and Pryor S. C. (2016). Using satellite-based measurements to explore spatiotemporal scales and variability of drivers of new particle formation. *Journal of Geophysical Research: Atmospheres*, *121*, 12217–12235. doi:10.1002/2016JD025568

Pryor, S. C., Joerger, V. M., and **Sullivan, R. C.** (2016). Empirical estimates of size-resolved precipitation scavenging coefficients for ultrafine particles. *Atmospheric Environment*, *143*, 133-138. doi:10.1016/j.atmosenv.2016.08.036

Sullivan, R. C. and Pryor, S. C. (2016). Dynamic and chemical controls on new particle formation occurrence and characteristics from in situ and satellite-based measurements. *Atmospheric Environment*, *127*, 316-325. doi:10.1016/j.atmosenv.2015.12.050

Pryor, S. C., **Sullivan, R. C.**, and Wright, T. (2016). Quantifying the roles of changing albedo, emissivity, and energy partitioning in the impact of irrigation on atmospheric heat content. *Journal of Applied Meteorology and Climatology*, *55*, 1699–1706. doi:10.1175/JAMC-D-15-0291.1

Crippa, P., **Sullivan, R. C.**, Thota, A., and Pryor, S. C. (2016). Evaluating the skill of high-resolution WRF-Chem simulations in describing drivers of aerosol direct climate forcing at the regional scale. *Atmospheric Chemistry and Physics*, *16*, 397–416. doi:10.5194/acp-16-397-2016

Sullivan, R. C., Levy, R. C., and Pryor, S. C. (2015). Spatiotemporal coherence of mean and extreme aerosol particle events over eastern North America as observed from satellite. *Atmospheric Environment*, *112*, 126-135. doi:10.1016/j.atmosenv.2015.04.026

Sullivan, R. C. and Pryor, S. C. (2014). Quantifying spatiotemporal variability of fine particles in an urban environment using combined fixed and mobile measurements. *Atmospheric Environment*, *89*, 664-671. doi:10.1016/j.atmosenv.2014.03.007

Book chapters, technical reports, and other publications:

Helbig, M., Gerken, T., Beamesderfer, E., Baldocchi, D. D., Banerjee, T., Biraud, S. C., Brunsell, N. A., Burns, S. P., Chan, W. S., Desai, A. R., Fuentes, J. D., Hollinger, D. Y., Kljun, N., Mauder, M., Rey-Sanchez, C., Seyednasrollahm, B., Stoy, P. C., **Sullivan, R. C.**, Vilà-Guerau de Arellano, J., Wharton, S., Yi, C., and Richardson, A. D. (2020). Understanding biosphere-atmosphere interactions through tower-based flux and continuous atmospheric boundary layer measurements. DOE AmeriFlux Whitepaper.

Beckman, P., Catlett, C., Ahmed, M., Alawad, M., Bai, L., Balaprakash, P., Barker, K., Berry, R., Bhuyan, A., Brebner, G., Burkes, K., Butko, A., Cappello, F., Chard, R., Collis, S., Cree, J., Dasgupta, D., Evdokimov, A., Fields, J., Fuhr, P., Harper, C., Jin, Y., Kettimuthu, R., Kiran, M., Kozma, R., Kumar, P., Kumar, Y., Luo, L., Mashayekhy, L., Monga, I., Nickless, B., Pappas, T., Peterson, E., Pfeffer, T., Rakheja, S., Rodriguez Tribaldos, V., Rooke, S., Roy, S., Saadawi, T., Sandy, A., Sankaran, R., Schwarz, N., Somnath, S., Stan, M., Stuart, C., **Sullivan, R.**, Sumant, A., Tchilinguirian, G., Tran, N., Veeramany, A., Wang, A., Wang, B., Wiedlea, A., Wielandt, S., Windus, T., Wu, Y., Yang, X., Yao, Z., Yu, R., Zeng, Y., and Zhang, Y. (2020). 5G-Enabled energy innovation: Advanced wireless networks workshop for science. Workshop report. doi: 10.2172/1606538

Sullivan, R. C., Kotamarthi, R., Hickmon, N., Jastrow, J., Jacob, R., Kemner, K., and Negri, C. (2020). Event based now forecasting. White paper to the *5G Enabled Energy Innovation Workshop (5GEEIW)*. Chicago, IL 10-12 March.

Sullivan, R. C., Kotamarthi, R., Hickmon, N., Jastrow, J., Jacob, R., Kemner, K., and Negri, C. (2020). Self-Driving Field Laboratories (SDFL). White paper to the *5G Enabled Energy Innovation Workshop (5GEEIW)*. Chicago, IL 10-12 March.

Cook, D. R. and **Sullivan R. C.** (2019, 2020). Eddy Correlation Flux Measurement System (ECOR) Instrument Handbook. Ed. by R. Stafford, U.S. Department of Energy. DOE/SC-ARM/TR-052. doi:10.2172/1467448

Cook, D. R. and **Sullivan R. C.** (2019). Energy Balance Bowen Ratio (EBBR) Instrument Handbook. Ed. by R. Stafford, U.S. Department of Energy. DOE/SC-ARM/TR-037. doi:10.2172/1020562

Cook, D. R. and **Sullivan R. C.** (2019). Surface Energy Balance System (SEBS) Instrument Handbook. Ed. by R. Stafford, ARM Climate Research Facility. DOE/SC-ARM/TR-092. doi:10.2172/1004944

Sullivan, R. C. (2017). Variability and drivers of aerosol particle characteristics and new particle formation from in situ and remote sensing measurements, and numerical simulations. *Ph.D. Dissertation*, Cornell University. doi:10.7298/X4W95798

Pryor, S. C., **Sullivan, R. C.**, Bernstein, D. N., Thota, A., and Crippa, P. (2017). Detection and attribution of trends in aerosol populations and extreme aerosol events over North America. *In: Report Series in Aerosol Science no. 201: Proceedings of the 3rd Pan-Eurasian Experiment (PEEX) Conference and the 7th PEEX Meeting* (Available at http://www.atm.helsinki.fi/FAAR/reportseries/rs-201.pdf). pp. 403-409. ISSN 0784-3496.

Pryor S. C., Crippa P., and **Sullivan, R. C.** (2015). Atmospheric chemistry. *In: Elsevier's Reference Module in Earth Systems and Environmental Sciences* (Available at http://www.sciencedirect.com/science/article/pii/B9780124095489091776). Ed. by J.T. Schoof. doi:10.1016/B978-0-12-409548-9.09177-6.

Sullivan, R. C. (2014). Regional to micro-scale spatiotemporal variability of atmospheric aerosol particles from satellite, fixed and mobile measurements. *M.S. Thesis*, Indiana University.

Presentations:

Gerken, T., Helbig, M., Beamesderfer, E., Baldocchi, D. D., Banerjee, T., Biraud, S. C., Brown, W. O. J., Brunsell, N. A., Burakowski, W. A., Burns, S. P., Butterworth. B. J., Chan, W. S., Davis, K. J., Desai,

A. R., Fuentes, J. D., Hollinger, D. Y., Kljun, N., Mauder, M., Novick, K. A., Perkins, J. M., Rahn, D. A., Rey-Sanchez, C., Santanello, J. A., Scott, R. L., Seyednasrollahm, B., Stoy, P. C., **Sullivan, R. C.**, Vilà-Guerau de Arellano, J., Wharton, S., Yi, C., and Richardson, A. D. (2021). Integrating continuous atmospheric boundary layer and tower-based flux measurements to advance understanding of land-atmosphere interactions. Oral presentation at the *American Meteorological Society's 35th Conference on Hydrology*. New Orleans, LA, Jan 12.

Sullivan, R. C. (2020). Land-atmosphere interaction study opportunities. *In breakout session: Advance atmospheric process studies in high-altitude complex terrain with the Surface Atmosphere Integrated field Laboratory (SAIL) campaign*. Invited oral presentation at the *2020 Joint ARM/ASR User Facility and PI Meeting*. Rockville, MD, June 25.

Sullivan, R. C. and Kyrouac, J. (2020). Over 20 years of soil moisture and temperature measurements across the ARM Southern Great Plains observatory. Poster presentation accepted at the *2020 Joint ARM/ASR User Facility and PI Meeting*. Rockville, MD, June 22-26 (session cancelled due to SARS-CoV-2).

Keeler, E., **Sullivan, R. C.**, Kyrouac, J., and Holdridge, D. (2020). Highlights of ARM In-Situ Measurement Improvements and Upgrades in 2019. Poster presentation accepted at the *2020 Joint ARM/ASR User Facility and PI Meeting*. Rockville, MD, June 22-26 (session cancelled due to SARS-CoV-2).

Sullivan, R. C., Kotamarthi, R., Hickmon, N., Jastrow, J., Jacob, R., Kemner, K., and Negri, C. (2020). Event based now forecasting. Oral presentation at the *5G Enabled Energy Innovation Workshop (5GEEIW)*. Chicago, IL 10 March.

Sullivan, R. C., Kotamarthi, R., Hickmon, N., Jastrow, J., Jacob, R., Kemner, K., and Negri, C. (2020). Self-Driving Field Laboratories (SDFL). Oral presentation at the *5G Enabled Energy Innovation Workshop (5GEEIW)*. Chicago, IL 10 March.

Sullivan, R. C., V. P., Kotamarthi, V. R., and Feng, Y. (2019). Improving Evapotranspiration Estimates from CMIP5 Simulations: Future Trends and Sensitivity to Changing Climate over North America. Poster presentation at the *American Geophysical Union's 2019 Fall Meeting*. San Francisco, CA, Dec. 12.

Sullivan, R. C. and Cook, D. R. (2019). ECOR SmartFlux: Upgrading the ARM eddy correlation flux measurement systems. Poster presentation at the *2019 Joint ARM/ASR User Facility and PI Meeting*. Rockville, MD, June 12.

Sullivan, R. C., Cook, D. R., Ghate, V. P., Kotamarthi, V. R., and Feng, Y. (2018). Substantial bias in satellite-based evapotranspiration retrievals from use of reanalysis meteorology and unconstrained canopy surface resistance. Poster presentation at the *American Geophysical Union's 2018 Fall Meeting*. Washington, D.C., Dec. 10.

Sullivan, R. C. and Cook, D. R. (2018). Southern Great Plains soil moisture: Statistical predictability and comparison to Soil Moisture Active Passive (SMAP) retrievals. Poster presentation at the 2018 Marena, Oklahoma, In Situ Sensor Testbed (MOISST) Workshop. Lincoln, NE, June 6.

Sullivan, R. C. and Cook, D. R. (2018). Comparison of EBBR and ECOR flux measurements at SGP E39. Poster presentation at the *2018 Joint ARM/ASR User Facility and PI Meeting*. Tysons, Virginia, Mar. 21.

Cook, D. R. and **Sullivan, R. C.** (2018). Evidence of drought and disease, and recovery in ARM measurements at Okmulgee, Oklahoma forest. Poster presentation at the *2018 Joint ARM/ASR User Facility and PI Meeting*. Tysons, Virginia, Mar. 21.

Sullivan, R. C., Crippa, P., Matsui, H., Leung, L. Y. R., Zhao, C., Thota, A., and Pryor, S. C. (2018). Modeling the impact of new particle formation on regional cloud radiative forcing. Oral presentation at the *American Meteorological Society's 10th Symposium on Aerosol–Cloud–Climate Interactions*. Austin, TX, Jan. 8.

Bernstein, D., **Sullivan, R. C.**, Crippa, P., Thota, A., and Pryor, S. C. (2017). Diagnosing causes of extreme aerosol optical depth events. Poster presented at the *American Geophysical Union's 2017 Fall Meeting*. New Orleans, LA, Dec. 14.

Pryor, S. C., **Sullivan, R. C.**, Bernstein, D., Thota, A., Crippa, P. (2017). Detection and attribution of trends in aerosol populations and extreme aerosol events over North America. Poster presentation at the *3rd Pan-Eurasian Experiment (PEEX) Science Conference*. Moscow, Russia, Sept. 19-22.

Sullivan, R. C., Crippa, P., Matsui, H., Leung, L. Y. R., Zhao, C., Thota, A., and Pryor, S. C. (2017). New particle formation leads to cloud dimming. Poster presentation at the *2017 Gordon Research Conference (GRC) in Atmospheric Chemistry*, Newry, Maine, Aug. 2-3.

Sullivan, R. C., Crippa, P., Matsui, H., Leung, L. Y. R., Zhao, C., Thota, A., and Pryor, S. C. (2017). New particle formation leads to cloud dimming. Oral presentation at the *Atmospheric Chemistry Colloquium for Emerging Senior Scientists XIV*, Brookhaven National Laboratory, Upton, NY, July 29.

Sullivan, R. C. (2017). Variability and Drivers of Aerosol Particle Characteristics and New Particle Formation from In Situ and Remote Sensing Measurements and Numerical Simulations. Invited seminar at Argonne National Laboratory, July 25.

Sullivan, R. C. (2017). Variability and Drivers of Aerosol Particle Characteristics and New Particle Formation from In Situ and Remote Sensing Measurements and Numerical Simulations. Invited seminar at Savannah River National Laboratory, June 29.

Sullivan, R. C., Levy, R. C., da Silva, A. M., and Pryor, S. C. (2017). Developing and diagnosing climate change indictors of regional aerosol optical properties. PICO (Presenting Interactive Content) presentation at the *European Geosciences Union General Assembly 2017*. Vienna, Austria, April 26.

Pryor, S. C., Crippa, P., and **Sullivan, R. C.** (2016). Assessing value-added by high-resolution regional simulations of climate-relevant aerosol particle properties. Poster presented at the *International Conference on Regional Climate (ICRC) – COordinated Regional climate Downscaling Experiment (CORDEX) 2016*. Stockholm, Sweden, May 17 – 20.

Crippa, P., **Sullivan, R. C.**, Thota, A., Li, Z., and Pryor, S. C. (2015). Evaluating the spatiotemporal variability of WRF-Chem aerosol particle properties and extreme concentrations over eastern North America. Oral presentation at the *2015 European Aerosol Conference*, Milan, Italy, Sept. 9.

Pryor, S. C., Crippa P., and **Sullivan, R. C.** (2015). How skillfully can we simulate drivers of aerosol direct climate forcing? Oral presentation at the *Twelfth Informal Conference on Atmospheric and Molecular Science*, Aarhus University, Denmark, June 8.

Sullivan, R. C., Crippa, P., Thota, A., Levy, R. C., and Pryor, S. C. (2015). Quantifying the scales of coherence and causes of spatiotemporal variability of aerosol particle properties and extreme concentrations over eastern North America. Oral presentation at the *2015 Joint Assembly (AGU, CGU, GAC, and MAC)*, Montreal, Quebec, Canada, May 5.

Pryor, S.C., Barthelmie, R. J., and **Sullivan, R. C.** (2015). Mechanisms responsible for the size-dependence of, and bi-directionality of, ultrafine particle fluxes over forest. Oral presentation at the *2015 Joint Assembly (AGU, CGU, GAC, and MAC)*, Montreal, Quebec, Canada, May 4.

Sullivan, R. C., Levy, R. C., and Pryor, S. C. (2014). Spatial coherence of atmospheric particle properties over eastern North America as observed from satellites. Poster presentation at the *2014 Young Scientist Forum*, NASA Goddard Space Flight Center, Greenbelt, MD, June 26.

Sullivan, R. C., Pryor, S. C., Barthelmie, R. J., and Filippelli, G. M. (2014). Intra-urban variability of fine particle concentrations: A case study from Indianapolis. Oral presentation at the *Urban Health Conference*, Indiana University – Purdue University Indianapolis, April 1.

Sullivan, R. C. and Pryor, S. C., (2014). Spatial coherence of aerosol particle properties observed from satellites. Oral presentation at the *Crossroads Geology Conference*. Indiana University, Bloomington, March 28.

Sullivan, R. C., Pryor, S. C., Barthelmie, R. J., Filippelli, G. M., and Crippa, P. (2013). Understanding spatiotemporal variability of fine particulate matter in an urban environment using combined fixed and mobile measurements. Oral presentation at the *American Geophysical Union's 2013 Fall Meeting*. San Francisco, CA, Dec. 12.

Sullivan, R. C., Pryor, S. C., Filippelli, G. M., and Morrison, D. (2013). Understanding spatiotemporal variability of fine particulate matter concentrations in Indianapolis, Indiana. Oral presentation at the *Crossroads Geology Conference*. Indiana University, Bloomington, April 5.

Awards and grants:

2020	Impact Argonne Award, for notable achievement in Enhancing of Argonne's Reputation
2021-2023	DOE ARM Mobile Facility 2: *Surface Atmosphere Integrated Field Laboratory (SAIL)*. Sullivan CO-I (PI Feldman, LBNL).
2017-2020	Laboratory Directed Research and Development grant (DOE) 2018-055-N0: *Variability and trends in land surface properties: effects on boundary layer physics and extremes onset*. Sullivan Co-PI (PI Feng). $441k.
2020	Argonne National Laboratory Environmental Science Division Program Development Fund, travel to represent ANL at 5G Enabled Energy Innovation Workshop (5GEEIW) in Chicago, IL. $600
2018	Argonne National Laboratory Environmental Science Division Program Development Fund, travel to represent ANL at NOAA/U.S. Forest Service Memorandum of Understanding meeting in Boise, ID. $2000
2017	Atmospheric Chemistry Colloquium for Emerging Senior Scientists XIV (ACCESS XIV)
2014-2017	NASA Earth and Space Science Fellowship NNX14AP56H: *Diagnosing Spatiotemporal Coherence and Variability of Aerosol Particle Concentrations Using a Satellite Proxy*. $90k
2014-2015	CU Department of Earth and Atmospheric Sciences Excellence in Research Award. $1000
2015	CU Graduate Conference Travel Grant to 2015 Joint Assembly Meeting. $235
2013-2014	IU Office of Sustainability's Graduate Student Research Development Grant. $3000
2013	IU Department of Geological Science Travel Grant to AGU Fall 2013 Conference. $400
2013	IU Department of Geological Science Summer Research Grant-in-Aid. $500
2012	Nancy C. Wick Award for Outstanding Senior in Meteorology (NIU). $500
2010-2012	Dean's List. Fall 2010, Spring 2011, Fall 2011, and Spring 2012 (NIU)
2010-2011	National SMART Award (National Science & Mathematics Access to Retain Talent; NIU). $4000
2007	Distinguished Scholar Award (Harper College). Full tuition.

Professional affiliation and service:

- National soil moisture network working group
- Argonne representative for NOAA/US Forest Service memorandum of understanding fire weather research working group
- Member (past or current): American Geophysical Union, European Geosciences Union, American Meteorological Society
- Peer Reviewer, *Journal of Geophysical Research: Atmospheres*, *Atmospheric Environment*
- Volunteer (2015-2017), Tompkins County Society for the Prevention of Cruelty to Animals