

# Michael P Hannigan

## List of Publications by Year in descending order

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Version: 2024-02-01

110  
papers

4,945  
citations

101384

36  
h-index

114278

63  
g-index

116  
all docs

116  
docs citations

116  
times ranked

5888  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | Characterization of Primary Organic Aerosol Emissions from Meat Cooking, Trash Burning, and Motor Vehicles with High-Resolution Aerosol Mass Spectrometry and Comparison with Ambient and Chamber Observations. <i>Environmental Science &amp; Technology</i> , 2009, 43, 2443-2449. | 4.6 | 365       |
| 2  | Seasonal Variability in Bacterial and Fungal Diversity of the Near-Surface Atmosphere. <i>Environmental Science &amp; Technology</i> , 2013, 47, 12097-12106.  | 4.6 | 349       |
| 3  | The next generation of low-cost personal air quality sensors for quantitative exposure monitoring. <i>Atmospheric Measurement Techniques</i> , 2014, 7, 3325-3336.   | 1.2 | 206       |
| 4  | Respeciation of organic gas emissions and the detection of excess unburned gasoline in the atmosphere. <i>Environmental Science &amp; Technology</i> , 1992, 26, 2395-2408.  | 4.6 | 175       |
| 5  | Source Apportionment of in Vitro Reactive Oxygen Species Bioassay Activity from Atmospheric Particulate Matter. <i>Environmental Science &amp; Technology</i> , 2008, 42, 7502-7509.   | 4.6 | 156       |
| 6  | The Temporal Lag Structure of Short-term Associations of Fine Particulate Matter Chemical Constituents and Cardiovascular and Respiratory Hospitalizations. <i>Environmental Health Perspectives</i> , 2012, 120, 1094-1099.   | 2.8 | 148       |
| 7  | Bioassay-Directed Chemical Analysis of Los Angeles Airborne Particulate Matter Using a Human Cell Mutagenicity Assay. <i>Environmental Science &amp; Technology</i> , 1998, 32, 3502-3514.   | 4.6 | 144       |
| 8  | Low-Cost Air Quality Monitoring Tools: From Research to Practice (A Workshop Summary). <i>Sensors</i> , 2017, 17, 2478.  | 2.1 | 144       |
| 9  | A Macrophage-Based Method for the Assessment of the Reactive Oxygen Species (ROS) Activity of Atmospheric Particulate Matter (PM) and Application to Routine (Daily-24 h) Aerosol Monitoring Studies. <i>Aerosol Science and Technology</i> , 2008, 42, 946-957.                     | 1.5 | 142       |
| 10 | ARIEL, 2012, , .   |     | 126       |
| 11 | Trends in Fine Particle Concentration and Chemical Composition in Southern California. <i>Journal of the Air and Waste Management Association</i> , 2000, 50, 43-53.   | 0.9 | 109       |
| 12 | Hallway based automatic indoor floorplan construction using room fingerprints. , 2013, , .   |     | 93        |
| 13 | Natural soiling of photovoltaic cover plates and the impact on transmission. <i>Renewable Energy</i> , 2015, 77, 166-173.  | 4.3 | 91        |
| 14 | Approach for quantification of metal oxide type semiconductor gas sensors used for ambient air quality monitoring. <i>Sensors and Actuators B: Chemical</i> , 2015, 208, 339-345.  | 4.0 | 87        |
| 15 | Characterization of organic aerosol in Big Bend National Park, Texas. <i>Atmospheric Environment</i> , 2002, 36, 5807-5818.  | 1.9 | 85        |
| 16 | MAQS, 2011, , .  |     | 84        |
| 17 | Source Apportionment of Fine (PM <sub>1.8</sub> ) and Ultrafine (PM <sub>0.1</sub> ) Airborne Particulate Matter during a Severe Winter Pollution Episode. <i>Environmental Science &amp; Technology</i> , 2009, 43, 272-279.  | 4.6 | 69        |
| 18 | Concentrations and source insights for trace elements in fine and coarse particulate matter. <i>Atmospheric Environment</i> , 2014, 89, 373-381.   | 1.9 | 68        |

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|----|---|-----|-----------|
| 19 | New Emission Factors and Efficiencies from in-Field Measurements of Traditional and Improved Cookstoves and Their Potential Implications. <i>Environmental Science &amp; Technology</i> , 2017, 51, 12508-12517.      | 4.6 | 67        |
| 20 | Organic compounds in radiation fogs in Davis (California). <i>Atmospheric Research</i> , 2002, 64, 99-108.  | 1.8 | 64        |
| 21 | Assessment of cookstove stacking in Northern Ghana using surveys and stove use monitors. <i>Energy for Sustainable Development</i> , 2016, 34, 67-76.   | 2.0 | 64        |
| 22 | Size Distribution of Trace Organic Species Emitted from Heavy-Duty Diesel Vehicles. <i>Environmental Science &amp; Technology</i> , 2007, 41, 1962-1969.  | 4.6 | 62        |
| 23 | Quantification Method for Electrolytic Sensors in Long-Term Monitoring of Ambient Air Quality. <i>Sensors</i> , 2015, 15, 27283-27302.  | 2.1 | 59        |
| 24 | Performance of artificial neural networks and linear models to quantify 4 trace gas species in an oil and gas production region with low-cost sensors. <i>Sensors and Actuators B: Chemical</i> , 2019, 283, 504-514. | 4.0 | 52        |
| 25 | Source apportionment using positive matrix factorization on daily measurements of inorganic and organic speciated PM <sub>2.5</sub> . <i>Atmospheric Environment</i> , 2010, 44, 2731-2741.                           | 1.9 | 50        |
| 26 | Light absorption of organic carbon and its sources at a southeastern U.S. location in summer. <i>Environmental Pollution</i> , 2019, 244, 38-46.  | 3.7 | 48        |
| 27 | Adoption of improved biomass stoves and stove/fuel stacking in the REACCTING intervention study in Northern Ghana. <i>Energy Policy</i> , 2019, 130, 361-374.   | 4.2 | 47        |
| 28 | Use of Synthetic Data to Evaluate Positive Matrix Factorization as a Source Apportionment Tool for PM <sub>2.5</sub> Exposure Data. <i>Environmental Science &amp; Technology</i> , 2006, 40, 1892-1901.              | 4.6 | 46        |
| 29 | PM <sub>2.5</sub> characterization for time series studies: Pointwise uncertainty estimation and bulk speciation methods applied in Denver. <i>Atmospheric Environment</i> , 2009, 43, 1136-1146.                     | 1.9 | 45        |
| 30 | Drop size-dependent chemical composition of clouds and fogs. Part II: Relevance to interpreting the aerosol/trace gas/fog system. <i>Atmospheric Environment</i> , 2004, 38, 1403-1415.                               | 1.9 | 44        |
| 31 | Gas/particle partitioning of n-alkanes, PAHs and oxygenated PAHs in urban Denver. <i>Atmospheric Environment</i> , 2014, 95, 355-362.   | 1.9 | 44        |
| 32 | Coupling between Land Ecosystems and the Atmospheric Hydrologic Cycle through Biogenic Aerosol Pathways. <i>Bulletin of the American Meteorological Society</i> , 2005, 86, 1738-1742.                                | 1.7 | 43        |
| 33 | Positive Matrix Factorization of PM <sub>2.5</sub> : Comparison and Implications of Using Different Speciation Data Sets. <i>Environmental Science &amp; Technology</i> , 2012, 46, 11962-11970.                      | 4.6 | 42        |
| 34 | The contribution of biological particles to observed particulate organic carbon at a remote high altitude site. <i>Atmospheric Environment</i> , 2009, 43, 4278-4282.   | 1.9 | 41        |
| 35 | Positive matrix factorization of PM <sub>2.5</sub> eliminating the effects of gas/particle partitioning of semivolatile organic compounds. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 7381-7393.            | 1.9 | 41        |
| 36 | Understanding the ability of low-cost MOx sensors to quantify ambient VOCs. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 1441-1460.  | 1.2 | 40        |

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|----|--|-----|-----------|
| 37 | Size-Resolved Source Apportionment of Airborne Particle Mass in a Roadside Environment. <i>Environmental Science &amp; Technology</i> , 2008, 42, 6580-6586.   | 4.6 | 39        |
| 38 | Water soluble organic aerosols in the Colorado Rocky Mountains, USA: composition, sources and optical properties. <i>Scientific Reports</i> , 2016, 6, 39339.  | 1.6 | 39        |
| 39 | Assessing positive matrix factorization model fit: a new method to estimate uncertainty and bias in factor contributions at the measurement time scale. <i>Atmospheric Chemistry and Physics</i> , 2009, 9, 497-513. | 1.9 | 38        |
| 40 | Gas/Particle Partitioning of 2-Methyltetrols and Levoglucosan at an Urban Site in Denver. <i>Environmental Science &amp; Technology</i> , 2014, 48, 2835-2842.   | 4.6 | 38        |
| 41 | Assessment of PM dry deposition on solar energy harvesting systems: Measurement model comparison. <i>Aerosol Science and Technology</i> , 2016, 50, 380-391.   | 1.5 | 38        |
| 42 | Assessing a low-cost methane sensor quantification system for use in complex rural and urban environments. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 3569-3594.  | 1.2 | 38        |
| 43 | Research on Emissions, Air quality, Climate, and Cooking Technologies in Northern Ghana (REACTING): study rationale and protocol. <i>BMC Public Health</i> , 2015, 15, 126.  | 1.2 | 37        |
| 44 | Bacterial Mutagenicity of Urban Organic Aerosol Sources in Comparison to Atmospheric Samples. <i>Environmental Science &amp; Technology</i> , 1994, 28, 2014-2024.   | 4.6 | 36        |
| 45 | Effects of Plug-In Hybrid Electric Vehicles on Ozone Concentrations in Colorado. <i>Environmental Science &amp; Technology</i> , 2010, 44, 6256-6262.  | 4.6 | 36        |
| 46 | Deliberating performance targets workshop: Potential paths for emerging PM2.5 and O3 air sensor progress. <i>Atmospheric Environment: X</i> , 2019, 2, 100031.   | 0.8 | 36        |
| 47 | PM2.5 characterization for time series studies: Organic molecular marker speciation methods and observations from daily measurements in Denver. <i>Atmospheric Environment</i> , 2009, 43, 2018-2030.                | 1.9 | 34        |
| 48 | Positive matrix factorization of a 32-month series of daily PM2.5 speciation data with incorporation of temperature stratification. <i>Atmospheric Environment</i> , 2013, 65, 11-20.                                | 1.9 | 34        |
| 49 | A Hybrid Sensor System for Indoor Air Quality Monitoring. , 2013, , .  |     | 33        |
| 50 | Liquified Petroleum Gas (LPG) Supply and Demand for Cooking in Northern Ghana. <i>EcoHealth</i> , 2018, 15, 716-728.   | 0.9 | 33        |
| 51 | Community-Based Health and Exposure Study around Urban Oil Developments in South Los Angeles. <i>International Journal of Environmental Research and Public Health</i> , 2018, 15, 138.                              | 1.2 | 31        |
| 52 | Intra-urban spatial variability of surface ozone in Riverside, CA: viability and validation of low-cost sensors. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 1777-1792.                                    | 1.2 | 31        |
| 53 | Source Contributions to the Mutagenicity of Urban Particulate Air Pollution. <i>Journal of the Air and Waste Management Association</i> , 2005, 55, 399-410.   | 0.9 | 30        |
| 54 | Size Distribution of Trace Organic Species Emitted from Light-Duty Gasoline Vehicles. <i>Environmental Science &amp; Technology</i> , 2007, 41, 7464-7471.   | 4.6 | 28        |

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|----|---|-----|-----------|
| 55 | Impact of Gas/Particle Partitioning of Semivolatile Organic Compounds on Source Apportionment with Positive Matrix Factorization. <i>Environmental Science &amp; Technology</i> , 2014, 48, 9053-9060.                            | 4.6 | 28        |
| 56 | Comparisons of urban and rural PM <sub>10</sub> and PM <sub>2.5</sub> mass concentrations and semi-volatile fractions in northeastern Colorado. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 7469-7484.                   | 1.9 | 28        |
| 57 | Rural-urban differences in cooking practices and exposures in Northern Ghana. <i>Environmental Research Letters</i> , 2017, 12, 065009.   | 2.2 | 27        |
| 58 | Multi-Group Encoder-Decoder Networks to Fuse Heterogeneous Data for Next-Day Air Quality Prediction. , 2019, , .  |     | 27        |
| 59 | Title is missing!. <i>Water, Air and Soil Pollution</i> , 2001, 1, 303-312.   | 0.8 | 26        |
| 60 | Source identification of personal exposure to fine particulate matter using organic tracers. <i>Atmospheric Environment</i> , 2009, 43, 1972-1981.  | 1.9 | 25        |
| 61 | Temporal patterns in daily measurements of inorganic and organic speciated PM <sub>2.5</sub> in Denver. <i>Atmospheric Environment</i> , 2010, 44, 987-998.   | 1.9 | 25        |
| 62 | Using A Low-Cost Sensor Array and Machine Learning Techniques to Detect Complex Pollutant Mixtures and Identify Likely Sources. <i>Sensors</i> , 2019, 19, 3723.  | 2.1 | 25        |
| 63 | Human Cell Mutagens in Los Angeles Air. <i>Environmental Science &amp; Technology</i> , 1997, 31, 438-447.  | 4.6 | 24        |
| 64 | Collaborative calibration and sensor placement for mobile sensor networks. , 2012, , .  |     | 23        |
| 65 | Exposures to and origins of carbonaceous PM <sub>2.5</sub> in a cookstove intervention in Northern Ghana. <i>Science of the Total Environment</i> , 2017, 576, 178-192.   | 3.9 | 22        |
| 66 | Quantifying Neighborhood-Scale Spatial Variations of Ozone at Open Space and Urban Sites in Boulder, Colorado Using Low-Cost Sensor Technology. <i>Sensors</i> , 2017, 17, 2072.  | 2.1 | 22        |
| 67 | Characterization and Nonparametric Regression of Rural and Urban Coarse Particulate Matter Mass Concentrations in Northeastern Colorado. <i>Aerosol Science and Technology</i> , 2012, 46, 108-123.                               | 1.5 | 21        |
| 68 | The short-term association of selected components of fine particulate matter and mortality in the Denver Aerosol Sources and Health (DASH) study. <i>Environmental Health</i> , 2015, 14, 49.                                     | 1.7 | 21        |
| 69 | Testing the performance of field calibration techniques for low-cost gas sensors in new deployment locations: across a county line and across Colorado. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 6351-6378.          | 1.2 | 21        |
| 70 | Evaluating and improving the reliability of gas-phase sensor system calibrations across new locations for ambient measurements and personal exposure monitoring. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 4211-4239. | 1.2 | 21        |
| 71 | Intra-urban spatial variability of PM <sub>2.5</sub> -bound carbonaceous components. <i>Atmospheric Environment</i> , 2012, 46, 486-494.  | 1.9 | 20        |
| 72 | Seasonal and spatial variation of the bacterial mutagenicity of fine organic aerosol in southern California. <i>Environmental Health Perspectives</i> , 1996, 104, 428-436.   | 2.8 | 19        |

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|----|---|-----|-----------|
| 73 | Improving present day and future estimates of anthropogenic sectoral emissions and the resulting air quality impacts in Africa. <i>Faraday Discussions</i> , 2017, 200, 397-412.                                | 1.6 | 19        |
| 74 | Intra-urban spatial variability and uncertainty assessment of PM <sub>2.5</sub> sources based on carbonaceous species. <i>Atmospheric Environment</i> , 2012, 60, 305-315.                                      | 1.9 | 18        |
| 75 | Impact of natural soiling on the transmission of PV cover plates. , 2013, , .   |     | 16        |
| 76 | Predicting Photovoltaic Soiling From Air Quality Measurements. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 1142-1147.  | 1.5 | 16        |
| 77 | Using gas-phase air quality sensors to disentangle potential sources in a Los Angeles neighborhood. <i>Atmospheric Environment</i> , 2020, 233, 117519.   | 1.9 | 14        |
| 78 | Collocated speciation of PM <sub>2.5</sub> using tandem quartz filters in northern nanjing, China: Sampling artifacts and measurement uncertainty. <i>Atmospheric Environment</i> , 2021, 246, 118066.          | 1.9 | 14        |
| 79 | Characterizing methane and total non-methane hydrocarbon levels in Los Angeles communities with oil and gas facilities using air quality monitors. <i>Science of the Total Environment</i> , 2021, 777, 146194. | 3.9 | 14        |
| 80 | Photochemical Aging of Atmospheric Particulate Matter in the Aqueous Phase. <i>Environmental Science &amp; Technology</i> , 2021, 55, 13152-13163.  | 4.6 | 14        |
| 81 | Indoor Pollutant Levels from the Use of Unvented Natural Gas Fireplaces in Boulder, Colorado. <i>Journal of the Air and Waste Management Association</i> , 2001, 51, 1654-1661.                                 | 0.9 | 13        |
| 82 | Characterization of coarse particulate matter in the western United States: a comparison between observation and modeling. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 1311-1327.                      | 1.9 | 13        |
| 83 | MAQS. , 2011, , .   |     | 12        |
| 84 | Evaluation of retrofit crankcase ventilation controls and diesel oxidation catalysts for reducing air pollution in school buses. <i>Atmospheric Environment</i> , 2009, 43, 5916-5922.                          | 1.9 | 11        |
| 85 | Intra-community spatial variation of size-fractionated organic compounds in Long Beach, California. <i>Air Quality, Atmosphere and Health</i> , 2009, 2, 69-88.   | 1.5 | 11        |
| 86 | Development and validation of inexpensive, automated, dynamic flux chambers. <i>Atmospheric Measurement Techniques</i> , 2015, 8, 267-280.  | 1.2 | 11        |
| 87 | Comparing Building and Neighborhood-Scale Variability of CO <sub>2</sub> and O <sub>3</sub> to Inform Deployment Considerations for Low-Cost Sensor System Use. <i>Sensors</i> , 2018, 18, 1349.                | 2.1 | 11        |
| 88 | User-Centric Indoor Air Quality Monitoring on Mobile Devices. <i>AI Magazine</i> , 2013, 34, 11.  | 1.4 | 10        |
| 89 | Attributing Air Pollutant Exposure to Emission Sources with Proximity Sensing. <i>Atmosphere</i> , 2019, 10, 395.   | 1.0 | 10        |
| 90 | Kitchen Area Air Quality Measurements in Northern Ghana: Evaluating the Performance of a Low-Cost Particulate Sensor within a Household Energy Study. <i>Atmosphere</i> , 2019, 10, 400.                        | 1.0 | 10        |

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|-----|---|-----|-----------|
| 91  | Low-cost measurement techniques to characterize the influence of home heating fuel on carbon monoxide in Navajo homes. <i>Science of the Total Environment</i> , 2018, 625, 608-618.  | 3.9 | 9         |
| 92  | The sensitivity of health effect estimates from time-series studies to fine particulate matter component sampling schedule. <i>Journal of Exposure Science and Environmental Epidemiology</i> , 2013, 23, 481-486.  | 1.8 | 8         |
| 93  | Errors in coarse particulate matter mass concentrations and spatiotemporal characteristics when using subtraction estimation methods. <i>Journal of the Air and Waste Management Association</i> , 2013, 63, 1386-1398.   | 0.9 | 8         |
| 94  | Iron Speciation in PM 2.5 From Urban, Agriculture, and Mixed Environments in Colorado, USA. <i>Earth and Space Science</i> , 2020, 7, e2020EA001262.  | 1.1 | 8         |
| 95  | Prices, peers, and perceptions (P3): study protocol for improved biomass cookstove project in northern Ghana. <i>BMC Public Health</i> , 2018, 18, 1209.  | 1.2 | 7         |
| 96  | Exposures to Carbon Monoxide in a Cookstove Intervention in Northern Ghana. <i>Atmosphere</i> , 2019, 10, 402.  | 1.0 | 7         |
| 97  | Comparing Multipollutant Emissions-Based Mobile Source Indicators to Other Single Pollutant and Multipollutant Indicators in Different Urban Areas. <i>International Journal of Environmental Research and Public Health</i> , 2014, 11, 11727-11752.                                     | 1.2 | 6         |
| 98  | Enhanced Photovoltaic Soiling In An Urban Environment. , 2019, , .  |     | 6         |
| 99  | On the development and implementation of a project-based learning curriculum for air quality in K-12 schools. , 2015, , .   |     | 5         |
| 100 | Updated Emission Factors from Diffuse Combustion Sources in Sub-Saharan Africa and Their Effect on Regional Emission Estimates. <i>Environmental Science &amp; Technology</i> , 2019, 53, 6392-6401.  | 4.6 | 5         |
| 101 | A glimpse into real-world kitchens: Improving our understanding of cookstove usage through in-field photo-observations and improved cooking event detection (CookED) analytics. <i>Development Engineering</i> , 2021, 6, 100065.   | 1.4 | 5         |
| 102 | Improving Air Pollutant Metal Oxide Sensor Quantification Practices through: An Exploration of Sensor Signal Normalization, Multi-Sensor and Universal Calibration Model Generation, and Physical Factors Such as Co-Location Duration and Sensor Age. <i>Atmosphere</i> , 2021, 12, 645. | 1.0 | 5         |
| 103 | Regional and National Scale Spatial Variability of Photovoltaic Cover Plate Soiling and Subsequent Solar Transmission Losses. <i>IEEE Journal of Photovoltaics</i> , 2017, 7, 1354-1361.  | 1.5 | 4         |
| 104 | Health impacts of a randomized biomass cookstove intervention in northern Ghana. <i>BMC Public Health</i> , 2021, 21, 2211.   | 1.2 | 3         |
| 105 | Integrating a K-12 Education and Outreach Initiative into a Sustainability Research Network (Work in Progress) <a href="#">Tj ETQq1 1 0.784314 rgBT /Over</a>   |     | 2         |
| 106 | Initial results of a five site study comparing spatial variability of soiling and ambient particulate concentrations. , 2015, , .   |     | 2         |
| 107 | Natural and Unnatural Organic Matter in the Atmosphere: Recent Perspectives on the High Molecular Weight Fraction of Organic Aerosol. <i>ACS Symposium Series</i> , 2014, , 87-111.   | 0.5 | 1         |
| 108 | Applications and Limitations of Quantifying Speciated and Source-Appportioned VOCs with Metal Oxide Sensors. <i>Atmosphere</i> , 2021, 12, 1383.  | 1.0 | 1         |

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|-----|--|-----|-----------|
| 109 | Letters to the Editor. Journal of the Air and Waste Management Association, 2002, 52, 1133-1138.   | 0.9 | 0         |
| 110 | Introducing university laboratory tools into K-12 classrooms: Benefits and challenges. , 2017, , . |     | 0         |