Air Pollution Extremes Workshop
Columbia University, New York, NY USA
2920 Broadway
555 Lerner Hall
November 1-2, 2018

AGENDA

Thursday November 1

8:30  Breakfast
9:00  Welcome & Introduction (V. Faye McNeill)

Session 1: Perspectives from Around the Globe

Moderator: Dan Westervelt

9:15  Susan Anenberg: Estimating mortality associated with ambient air pollution in cities worldwide
9:25  Randall Martin: Perspectives on Global Fine Particulate Matter
9:35  Luisa Molina: Science-based Air Quality Management: Experience from Mexico City
9:45  Ritesh Gautam: Widespread Winter Fog over south Asia and its connection with air pollution, urban heat islands and agriculture fires
9:55  Abdus Salam: Air Quality Status at an Extremely Polluted Southeast Asian Mega City - Dhaka, Bangladesh
10:05 Puji Lestari: Field observation of particulate matter and Carbonaceous composition during peat fire episode in Sumatra Indonesia
10:15 Coffee

Session 1 (Continued): Perspectives from Around the Globe

10:40 Doug Worsnop: On-line mass spectrometry to reveal the composition of ambient aerosols
10:50 Wahid Mellouki: Air Pollution in Africa: Overview and challenges
11:00 Eloise Marais: Building Capacity to Monitor and Assess Air Quality in Africa
11:10 Discussion Panel

Session 2: Sources of Air Pollution

Moderator: A.R.Ravishankara

11:40 Eri Saikawa: Uncertainties in emission estimates of greenhouse gases and air pollutants in China and India and their impacts on regional air quality
11:50 Peter DeCarlo: In-situ measurements of aerosol composition in Nepal: linking aerosol sources to ambient concentrations
12:00 Sri Hapsari Budisulistiorini: Atmospheric processes influence the light-absorption properties of brown carbon in haze particles from Indonesian peat and biomass burning
12:10  *Lunch (on your own)*

**Session 2 (Continued): Sources of Air Pollution**

1:30  Sagnik Dey: Monitoring pollution build-up in Delhi during the dry season of 2001-2016 from space
1:40  Daven Henze: Sources of PM2.5 during pollution events in Korea
1:50  Shahzad Gani: Submicron aerosol composition in the world’s most polluted megacity: The Delhi Aerosol Supersite campaign
2:00  Alexandra Karambelas: Mitigating future ambient air-pollution attributable mortalities with emissions reductions
2:10  Discussion Panel

**Poster previews: 1-slide overview**

3:10  *Coffee*

**Session 3: Chemical composition and processing**  
*Moderator: V. Faye McNeill*

3:40  Becky Alexander: Heterogeneous Sulfate Aerosol Formation Mechanisms in Chinese Haze Events
3:50  Guangjie Zheng: Characteristics and Formation Mechanisms of Beijing Haze Episodes
4:00  Lijie Li: Nitrogen Dioxide and Secondary Aerosol Formation during Chinese Haze-Aerosol Episodes
4:20  Yafang Cheng: Multiphase chemistry as a key to understand air pollution and its mitigation strategies
4:30  Loretta Mickley: Contribution of hydroxymethane sulfonate to ambient particulate matter: A potential explanation for high particulate sulfur during severe winter haze in Beijing
4:40  Discussion Panel
5:10  Adjourn to walk to poster session
5:30  *Poster Session & Reception*

**Friday November 2**

8:30  *Breakfast*

**Session 4: Climate and Weather of Air Pollution Extremes**  
*Moderator: Arlene Fiore*

9:00  Sanat Kumar Das: Is fog responsible for winter-time extreme air pollution? A study over Eastern India
9:10  Yuxuan Wang: Air pollution extremes due to drought
9:20  Abhijit Chatterjee: The interaction between aerosols of varying sizes and rains of varying intensities and duration controls the below-cloud aerosol scavenging and acid rain: A long-term (2009-2015) study over eastern Himalaya in India
9:30 Marina Astitha: Seasonal ozone vertical profiles over North America using the AQMEII group of air quality models: model inter-comparison and stratospheric intrusions
9:40 Session 4 Discussion Panel
10:10 **Coffee**

**Session 5: Emerging Observations and Modeling Tools**
*Moderator: A.R. Ravishankara*

10:40 Andreas Tilgner: Model studies on multiphase chemistry interactions under polluted environmental conditions with MCM/CAPRAM
10:50 Priyanka DeSouza: Integration of data from low-cost air quality monitors with MISR satellite data: A case study in Nairobi
11:00 Barry Lefer: The International Integrated Observing System for Air Quality
11:10 Sarath Gutikunda: Air Pollution knowledge Assessment (APnA) city program - to support short-term (forecasts) and long-term (policy) analysis for Indian cities
11:20 R Subramanian: Air quality monitoring with lower-cost, low-power sensors
11:30 Rebecca Garland: Developing a platform for simulating air quality and impacts in South Africa
11:40 Rajesh Kumar: Improving short-term air quality predictions over the US using chemical data assimilation and analog-based statistical methods
11:50 Jun Wang: MAIA: A satellite mission to study air pollution and public health
12:00 **Lunch (on your own)**
1:10 **Coffee available**

**Session 5 (Continued)**

1:10 Bryan Duncan: Air pollution forecasts using the NASA GEOS model: A unified tool from local to global scales
1:20 Josh Apte: Fall 2018 air pollution in New Delhi: Tracking sources with online measurements and real-time models
1:30 Session 5 Discussion Panel

**Session 6: The Science-Policy-Health Nexus**
*Moderator: Ruth DeFries*

2:00 Jia Xing: Representing the nonlinear responses of tropospheric ozone and fine particulate matter to precursor emission changes
2:10 Miriam Marlier: Indonesian Haze Exposure and Local Health Outcomes
2:20 Dilip Chate: Ozone precursors emission mitigation for Chronic Obstructive Pulmonary Disease (COPD) cases in India
2:30 Mike He: Short- and Intermediate- Term Exposure to NO2 and Mortality: A Multi-County Analysis in China
2:40 Ye Wu: The regional and urban air quality impacts from future fuel diversity in China
2:50 Susanne Bauer: Desert dust, industrialization and agricultural fires: Health impacts of air pollution in Africa
3:00 Session 6 Discussion Panel
Wrap-up Discussion: Science and Policy perspectives

*Moderator: V. Faye McNeill*

3:30 Open discussion: Common features and potential differences across the globe

4:15 Adjourn
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<td>An Integrated Atmospheric Chemistry Approach for a Holistic Solution of Air Pollution</td>
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<td>A.R. (Ravi) Ravishankara</td>
<td>Premature Mortality due to PM2.5 over India: Effect of Atmospheric Transport and anthropogenic emissions</td>
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<td>Elucidating the origin of high aerosol pH in northern China</td>
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<td>Modeling multiphase chemistry during extreme haze episodes in Delhi using GAMMA</td>
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<td>Disha Sharma</td>
<td>Tracking the influence of long range transport of dust aerosols on their chemical characteristics observed in the NorthWest Indo Gangetic Plains.</td>
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<td>Temporal shifts in agricultural burning associated with the double-crop cycle of Punjab, India: implications for regional air quality</td>
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<td>Jordan Schnell</td>
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<td>Pierre Gentine</td>
<td>Can we use machine learning to improve convection representation and vertical transport?</td>
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<td>Robert Field</td>
<td>Coupled chemistry-climate model simulations of a massive 2017 smoke plume</td>
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<td>Current and future trends in wildfire smoke PM2.5 in the United States</td>
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<td>Beizhan Yan</td>
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