Sunday May 5 (6-9 pm): Young Scientists' Social (*Pierce Hall 301*)

**Day 1: Monday May 6**

8:30 Coffee, tea, pastries (*Geological Museum 100*)

Put up posters for **Poster Session A** (*Maxwell-Dworkin lobby*)

*Model overview and new developments* (*chair: Christoph Keller, NASA*)

9:00 Welcome, GEOS-Chem overview (Daniel Jacob, Harvard)
9:20 High-performance GEOS-Chem (GCHP) (Randall Martin, Dalhousie)
9:30 WRF-GC: online coupling of WRF and GEOS-Chem (Tzung-May Fu, SUSTC)
9:40 GEOS-Chem on the AWS cloud (Jiawei Zhuang, Harvard)
9:50 GEOS-Chem and the GMAO: Reaction, replay, and reanalysis (Steven Pawson, NASA)
10:00 Update on GMAO assimilation systems (Andrea Molod, NASA)
10:10 GEOS-Chem logo (Jeff Geddes, Boston U.)
10:15 Poster introductions (30 seconds, 1 slide)
A.1 Adaptive chemistry mechanisms for efficient numerical calculations in GEOS-Chem (Lu Shen, Harvard)
A.2 A CMake build system for GEOS-Chem (Liam Bindle, Dalhousie)
A.3 Machine learning emulator (Christoph Keller, NASA)
A.4 Coupling GEOS-Chem to CESM (Sebastian Eastham, MIT)
A.5 Validation and optimization of the RAS parameterization in GEOS-Chem (Tailong He, U. Toronto)
A.6 Effect of PBL mixing on air quality modeling during KORUS-AQ (Rokjin Park, Seoul National U.)

10:20 Coffee break

*Chemistry* (*chair: Eloise Marais, U. Leicester*)

10:40 **KEYNOTE**: Biogenic VOC chemistry influencing secondary organic aerosol (Joel Thornton, U. Washington)
11:00 Anthropogenic control over wintertime oxidation of atmospheric pollutants: the importance of incorporating atypical radical precursors (Jessica Haskins, U. Washington)
11:10 The global budget of methylethylketone (Jared Brewer, CSU)
11:20 The role of clouds in the tropospheric NOx cycle: a new modeling approach for cloud chemistry and its global implications (Chris Holmes, FSU)
11:40 Development of the adjoint of the GEOS-Chem UCX (Irene Dedoussi, MIT / TU Delft)
11:50 Poster introductions (30 seconds, 1 slide):
A.7 Furan oxidation mechanisms: How simple is too simple? How complex is too complex? (Benjamin Brown-Steiner, AER)
A.8 Biogenic emissions and chemistry in Southeast Australia (Jenny Fisher, U. Wollongong)
A.9 Comparison of GEOS-Chem and Hemispheric CMAQ predicted ozone and particulate matter (Barron Henderson, US EPA)
A.10 SatJ: A satellite-derived climatology of photolysis rates in the atmosphere (Jason Ducker, FSU)
A.11 Impacts of marine cloud brightening on atmospheric chemistry (Hannah Horowitz, U. Washington)
A.12 Global OH concentrations inferred from HCFC/HFCs (Jianxiong Sheng, MIT)
A.13 The impact of model resolution on ozone simulation (Kunna Li, U. Toronto)
A.14 Volatile organic compounds in fire smoke: How many matter? (Lu Hu, U. Montana)
A.15 The sources, transformations and health impacts of polycyclic aromatic hydrocarbons (Jamie Kelly, MIT)
A.16 Improving simple parameterization of secondary organic aerosol (SOA): IEPOX-SOA and urban SOA (Duseong Jo, U. Colorado)
A.17 Isotopic constraints on heterogeneous chemistry of NOx in extreme urban haze (Yuk Chun Chan, U. Washington)
A.18 SOA formation from volatile chemical products in the US (Momei Qin, US EPA)
A.19 Supplementing the analysis of ground-based FTIR measurements at Toronto with GEOS-Chem (Shoma Yamanouchi, U. Toronto)
A.20 Tropospheric ozone over Southeast Asia (Xiaolin Wang, PKU)
A.21 WRF-Chem simulation of ozone and particulate matter in the Pearl River Delta region, China (Haoran Zhang, NUIST)

12:00 Lunch on your own

1-3 pm GEOS-Chem Support Team help desk - Geological Museum 103A

**Emissions and surface fluxes (chair: Emily Fischer, CSU)**

1:30 Inverse modeling constraints on sources of NH3 using CrIS remote sensing measurements (Hansen Cao, U. Colorado)
1:40 Assessing the iterative finite difference mass balance and 4D-Var methods to retrieve ammonia emissions over North America using synthetic Cross-track Infrared Sounder observations (Chi Li, Dalhousie)
1:50 Recent trends in China’s anthropogenic emissions (Qiang Zhang, Tsinghua)
2:00 Impacts of improved burned area estimates on biomass burning emissions (Holly Nowell, FSU)
2:10 Health impacts of future fossil fuel emissions in Africa (Eloise Marais, U. Leicester)
2:20 Using OMI NO2 observations to evaluate seasonal trends in NOx emissions over eastern China: influence of NOx chemistry (Viral Shah, Harvard)
2:30 Global high-resolution emissions of soil NOx, biogenic VOC, and sea salt aerosols (Hongjian Weng, PKU)
2:40 Global isoprene measurements from CrIS (Kelley Wells, U. Minnesota)
2:50 Poster introductions (30 seconds, 1 slide)
A.22 Recent decline of NOx emissions in China observed from space by OMPS NM (Nan Lin, Tsinghua)
A.23 Constraining NMVOCs emissions with satellite and aircraft observations during KORUS-AQ (Jinkyul Choi, U. Colorado)
A.24 Diagnosing spatial biases and uncertainties in global fire emissions inventories: Indonesia as regional case study (Tianjia (Tina) Liu, Harvard)
A.25 Evaluating ocean sources of carbonyl sulfide (OCS) through remote atmosphere observations (Luke Schiferl, LDEO/Columbia)
A.26 Modeling of soil NO\textsubscript{x} in GEOS-chem (Jun Wang, U. Iowa)
A.27 Updates to the reactive nitrogen dry deposition parameterization in GEOS-Chem (Brian Boys, Dalhousie)
A.28 Spatio-seasonal variations of atmospheric ammonia: comprehensive model–observation comparison (Arshad Nair, SUNY-Albany)
A.29 Sub-grid ship emission of particle number concentrations: Parameterization and implication (Jingbo Mao, SUNY-Albany)
A.30 Source apportionment in GEOS-Chem (Carmen Lamancusa, U. Connecticut)
A.31 Representing pyrocumulonimbus events in GEOS-Chem (Kenneth Christian, NASA)
A.32 Fires in the Amazon Basin and their environmental impacts across South America (Eimy Bonilla, Harvard)
A.33 Health effects of air pollution embodied in international food trade (Yang Liu, Tsinghua)

3:00 Coffee break

3:15-3:45 **Model Clinic 1: Working with GEOS-Chem** (Bob Yantosca and Melissa Sulprizio, Harvard) – *Geological Museum 100*

3:15-3:45 **Model Clinic 2: WRF-GC: GEOS-Chem in WRF** (Haipeng Lin and Xu Feng, PKU) – *Maxwell-Dworkin G115*

3:15-3:45 **Stratospheric Working Group organizational meeting** (chairs: Dylan Jones, U. Toronto; Susan Strahan, NASA) – *Maxwell-Dworkin 119*

4:00-4:30 **Model Clinic 3: High-performance GEOS-Chem (GCHP)** (Lizzie Lundgren, Harvard; Sebastian Eastham, MIT) – *Geological Museum 100*

4:45-6:00 Working Group breakouts

- **Emissions and Surface Fluxes Working Group** (chairs: Eloise Marais, U. Leicester; Jintai Lin, PKU; Emily Fischer, CSU; Dylan Millet, U. Minnesota) – *Geological Museum 100*
- **Mercury and POPs Working Group** (chairs: Chris Holmes, FSU; Jenny Fisher, U. Wollongong) – *Pierce Hall 100F*
- **Transport Working Group** (Hongyu Liu, NIA; Andrea Molod, NASA) – *Maxwell-Dworkin 119*

6:00-8:00 **Poster Session A** (chair: Mat Evans, U. York)

Refreshments and dinner buffet

(please take down your poster when you leave)
Day 2: Tuesday May 7

8:30 Coffee, tea, pastries
Put up posters for **Poster Session B** in Maxwell-Dworkin lobby

**Aerosols** (*chair: Colette Heald, MIT*)

9:00 **KEYNOTE:** Decadal change in particulate organic carbon fractions (Annmarie Carlton, UC Irvine)
9:20 Heterogeneous sulfate formation in Chinese Haze events (Becky Alexander, U. Washington)
9:30 Simulation of trace metals in PM$_{2.5}$ over North America using the GEOS-Chem model (Junwei Xu, Dalhousie)
9:40 Defining domains of relevance for secondary organic aerosol formation (William Porter, UC Riverside)
10:00 New methodology for deriving PM$_{2.5}$ chemical composition using the synthesis of GEOS-Chem and High Spectral Resolution Lidar (HSRL) retrievals (Nicholas Meskhidze, NCSU)
10:10 Poster introductions (30 seconds, 1 slide):
B.1 Simulation of organic aerosol in China (Ruqian Miao, PKU)
B.2 PyroCb tropopause smoke composition modeling (Tyler Van, U. Iowa)
B.3 Improved representation of surface PM$_{2.5}$ using High Spectral Resolution Lidar retrievals and GEOS-Chem-derived aerosol types (Xinyi Ling, NCSU)
B.4 PM$_{2.5}$ over China during 2014-2017 inferred from MAIAC AOD and Cloud GEOS-Chem (Fei Yao, U. Edinburgh)
B.5 Investigating aerosol influences over Central Asia (Shannon Capps, Drexel U.)
B.6 Application of GEOS-Chem to interpret observations for the estimation of global PM$_{2.5}$ (Melanie Hammer, Dalhousie)
B.7 Sensitivity of global PM$_{2.5}$ to emission sectors in GEOS-Chem (Erin McDuffie, Dalhousie)
B.8 On the change of aerosol size distribution due to ionization (Irina Thaler, Hebrew U.)
B.9 Impact of mixing states on aerosol direct radiative forcing and heating rate based on GEOS-Chem-APM (Hailing Jia, SUNY-Albany)
B.10 The contribution of wild land-fire smoke to US PM$_{2.5}$ and its influence on recent trends (Katelyn O’Dell, CSU)
10:20 Coffee break

**Chemistry** (*chair: Barron Henderson, US EPA*)

10:40 Changes in aircraft emissions impacts due to non-linear, subgrid-scale plume processes (Thibaud Fritz, MIT)
10:50 Influences of ocean iodide on tropospheric photochemistry (Ryan Pound, U. York)
11:00 Tropospheric chlorine chemistry in GEOS-Chem (Xuan Wang, Harvard)
11:10 Using machine learning to bias correct ozone within GEOS-Chem (Peter Ivatt, U. York)
11:20 Observed covariance of ozone and PM$_{2.5}$ in the Yangtze River Delta region from 2015 to 2017 (Huibin Dai, NUIST)
11:30 Suppression of summer ozone formation under high aerosol conditions (Ke Li, Harvard)
11:40 Incorporating chemical interactions and co-emissions in top-down constraints on sources of
NO\textsubscript{x}, SO\textsubscript{2}, and CO (Zhen Qu, U. Colorado)

11:50 Poster introductions (30 seconds, 1 slide)

B.11 Implications of using the GEOS-Chem air mass factor for interpreting satellite NO\textsubscript{2} observations (Matt Cooper, Dalhousie)

B.12 Using satellite observations of tropospheric NO\textsubscript{2} columns to infer long-term trends in US NO\textsubscript{x} emissions: the importance of accounting for the free tropospheric NO\textsubscript{2} background (Rachel Silvern, Harvard)

B.13 Atmospheric impacts of improved sea-surface iodide fields and evidence for changes since 1950 (Tomas Sherwen, U. York)


B.15 Hydroxymethane sulfonate in extreme haze (Jonathan Moch, Harvard)

B.16 Impacts of atmospheric acidity on halogen chemistry from preindustrial to present day (Shuting Zhai, U. Washington)

B.17 Tropospheric bromine chemistry and its impact on ozone and OH (Lei Zhu, Harvard)

B.18 Stratospheric bromine loading in GEOS-Chem UCX and satellite-based retrievals of tropospheric BrO (Pam Wales, NASA)

B.19 Interpreting TROPOMI data over Southeast Asia using the nested GEOS-Chem model simulation (Margaret Marvin, U. Edinburgh)


B.21 How much does long-range transport of air pollutants from South Asia affect the Arctic region? (Sujai Banerji, U. Alaska Fairbanks)

B.22 Evaluating and improving Arctic ozone chemistry in GEOS-Chem (Kaitlyn Confer, FSU)

12:00 Group photo

12:00 Lunch on your own

1-3 pm GEOS-Chem Support Team help desk – Geological Museum 103A

**Chemistry-Ecosystem-Climate (chair: Hong Liao, NUIST)**

1:30 Coupling a simplified biosphere model with GEOS-Chem (Liang Feng, U. Edinburgh)

1:40 Evaluation of air pollution impacts on terrestrial ecosystems using GEOS-Chem (Amos Tai, CUHK)

1:50 Reassessment of historic fire trends based on Antarctic-wide array of ice cores and fire modeling (Pengfei Liu, Harvard)

2:00 Fire air pollution reduces global terrestrial productivity (Xu Yue, IAP CAS)

2:10 Development of the Beijing Climate Center climate-chemistry model (BCC-AGCM-GCHP): model description and evaluation (Xiao Lu, PKU)

2:20 Linking GEOS-Chem to CESM: An intermodel comparison of the modeling frameworks (Forrest Lacey, NCAR)

2:30 Constraining gaseous dry deposition velocity with in-situ flux observations (Anthony Wong, Boston U.)

2:40 Significant impact of cloud condensation water variability and empirical washout rate on concentrations of nitrate and ammonium (Gan Luo, SUNY-Albany)

2:50 Poster introductions (30 seconds, 1 slide):

B.23 Air quality and climate impact of charcoal use in Africa (Alfred Bockarie, U. Birmingham)

B.24 Investigating drivers of particulate matter pollution over India and implications for climate (Alex Karambelas, LDEO/Columbia)

B.25 An improved vegetation canopy representation in GEOS-Chem (Sam Silva, MIT)
B.26 Development of a new ecophysiology module in GEOS-Chem to represent biosphere-atmosphere exchange (Joey Lam, CUHK)

B.27 Fine-scale projections of wildfire under the mid- and late-21st century climate and land use in the western US (Yang Li, Harvard)

B.28 Radiative effects of aerosols and ozone in China over 2012-2017 as the consequence of clean air actions (Ruijun Dang, IAP CAS)

B.29 Source attribution of climate and health impacts from aerosols (Omar Nawaz, U. Colorado)

B.30 Ecosystem ozone impacts in past, present, future scenarios (David Yung, CUHK)

B.31 Impacts of China anthropogenic aerosols on springtime mesoscale convective systems over southern China (Lijuan Zhang, PKU)

B.32 Response of BVOC emissions to drought stress (Elizabeth Klovenski, U. Houston)

B.33 Sensitivity of aerosol radiative effects to shipping emissions (Deanna Kerry, Dalhousie)

3:00 Coffee break

3:15-4:30 Working Group breakouts

- **Chemistry-Ecosystem-Climate Working Group** (chairs: Amos Tai, CUHK; Lee Murray, U. Rochester; Hong Liao, NUIST; Jeff Geddes, Boston U.) – **Maxwell-Dworkin G115**
- **New software and coding developments in GEOS-Chem** (GEOS-Chem Support Team, discussion leads) – **Maxwell-Dworkin G125**

4:30-6:30 **Poster Session B** (chair: Becky Alexander, U. Washington)

- Refreshments

  (please take down your poster when you leave)
Day 3: Wednesday May 8

8:30  Coffee, tea, pastries
     Put up posters for **Poster Session C**

**Carbon gases** *(chair: Dylan Jones, U. Toronto)*

9:00  **KEYNOTE:** Regional and global scale measurements and modeling of CO$_2$, CH$_4$, and CO (Steve Wofsy, Harvard)

9:20  Recent trends in methane emissions from China and opportunities for mitigation (Scot Miller, Johns Hopkins U.)

9:30  Global budget of atmospheric methane as inferred from GOSAT satellite observations during 2009-2017 (Yuzhong Zhang, Harvard)

9:40  Towards an improved carbon greenhouse gas simulation in GEOS-Chem v12 (Beata Bukosa, U. Wollongong)

9:50  Resolving information in large-scale inversions (Kevin Bowman, JPL)

10:00 Optimizing OH distributions using $^{14}$CO and methyl chloroform in the GEOS-Chem adjoint (Lee Murray, U. Rochester)

10:10 Poster introductions (30 seconds, 1 slide):

C.1 Prior biosphere model impact on global terrestrial CO$_2$ fluxes estimated from OCO-2 retrievals (Sajeev Philip, NASA)

C.2 Diagnosing global changes in atmospheric methane using ethane and propane (Douglas Finch, U. Edinburgh)

C.3 Methane clumped isotopes in GEOS-Chem (Alice Drinkwater, U. Edinburgh)

C.4 Evaluation of a new methane isotopologue forward model of GEOS-Chem (Mingjian Shi, U. Rochester)

C.5 Interannual variability in CO$_2$ fluxes from OCO--2 using a geostatistical inverse model (Zichong Chen, Johns Hopkins U.)

C.6 Inverse modeling of CO$_2$ fluxes using O-Buoys, a multi-year dataset of surface observations from the Arctic Ocean (Kelly Graham, FSU)

C.7 Methane emissions from oil and gas industries in three western provinces of Canada using GOSAT observations in mass balance method and comparison with GEOS-Chem (Nazrul Islam, U. Northern British Columbia)

C.8 Regional inversion modeling: A framework for understanding CO$_2$ concentration in Seoul megacity (JongWong Lee, Seoul National U.)

C.9 Strengthened scientific support for the Endangerment Finding for atmospheric greenhouse gases (Loretta Mickley, Harvard)

C.10 The variation trend of atmospheric methane from observation and modeling (Haiyue Tan, PKU)

C.11 Top-down constraints on methane point source emissions from animal agriculture and waste based on GEM airborne measurements in the US Upper Midwest (Xueying Yu, U. Minnesota)

C.12 Reduced rank Jacobians: Decreasing the computational cost of high resolution analytic inversions (Hannah Nesser, Harvard)

10:20  Coffee break
Global atmospheric composition (chair: Daven Henze, U. Colorado)

10:40 Model analysis of interannual variability of Asian Tropopause Aerosol Layer: Transport pathways, sources, and composition (Bo Zhang, NIA)
10:50 Near real-time forecasts at 25km horizontal resolution (Emma Knowland, NASA)
11:00 Trade, atmospheric transport and globalizing air pollution: recent progress (Jintai Lin, PKU)
11:10 Applying GEOS-Chem-TOMAS to understand Arctic marine secondary aerosol contributions to particle size distributions (Betty Croft, Dalhousie)
11:20 On the temporal resolution of transport (Shiliang Wu, Michigan Tech)
11:30 Multi-model comparisons of multi-constituent satellite data assimilation based on ensemble Kalman filter for tropospheric chemistry analysis (Kazuyuki Miyazaki, JPL/JAMSTEC)
11:40 Constraining modeled remote oxidation capacity with ATom observations (Katie Travis, MIT/NASA)
11:50 Poster introductions (30 seconds, 1 slide)
C.13 Quantification of Canadian methane emissions using the ECCC surface observation network (Sabour Baray, York U.)
C.14 Modeling CO₂ fluxes using satellite observations (Feng Deng, U. Toronto)
C.15 Variability and sources of tropospheric aerosols over the North Atlantic during NAAMES (Hongyu Liu, NIA)
C.16 Long-range transport events of black carbon and carbon monoxide from East Asia to the Arctic (Kohei Ikeda, NEIS)
C.17 HCOOH from ATom (Xin Chen, U. Minnesota)
C.18 Detection of wildfire pollution in the Arctic using ground-based FTIR measurements and GEOS-Chem (Erik Lutsch, U. Toronto)
C.19 Temporal variations in CO and isoprene over tropical Africa (Christian DiMaria, U. Toronto)

12:00 Lunch on your own

1-3 pm GEOS-Chem Support Team help desk – Geological Museum 103A

Air quality (chair: Jintai Lin, PKU)

1:30 The effect of emission control measures on ozone concentration in Hangzhou during G20 meeting in 2016 (Ye Wang, NUIST)
1:40 Air quality and health co-benefits of shale gas development in China (Yanxu Zhang, Nanjing)
1:50 Air quality and health effects of the residential energy transition in China (Kelsey Bilsback, CSU)
2:00 Analysis of PM₂.₅ variations across China (Matthew Jolleys, U. Edinburgh)
2:10 Effect of the transport of ozone and its precursors in Central China on ozone pollution episodes in North China (Cheng Gong, IAP CAS)
2:20 Environmental and health impact of Chinese dietary change from 1980 to 2010 (Xueying Liu, CUHK)
2:30 Future changes in the sensitivity of inorganic fine particulate matter to precursor emissions in China (Mingwei Li, MIT)
2:40 Re-estimating ammonia emission inventory in eastern China using CrIS satellite observations of ammonia and GEOS-Chem adjoint model (Juliet (Liye) Zhu, Sun-Yat-Sen U.)
2:50 Poster introductions (30 seconds, 1 slide)
C.20 Designing new interventions to mitigate the impact of Indian agricultural residue burning
(Ruoyu Lan, MIT)
C.21 Understanding the sources of aerosol pollution in India (Sidhant Pai, MIT)
C.22 Air quality and health impacts of household energy transitions in the Indo Gangetic Plain
(Mrinmoy Chakraborty, U. British Columbia)
C.23 Impact of emissions from coal fired power plants on health using air chemistry modeling
(Madhulika Gurazada, Indian School of Business Hyderabad)
C.24 Air quality study using GEOS-Chem (Xinhua Shen, U. Northern Iowa)
C.25 The impact of large-scale afforestation project on ozone pollution in Beijing-Tianjin-Hebei
region, China (Xin Long, SUSTC)
C.26 Investigation of extreme particulate pollution in Beijing (Anqi Hu, NUIST)
C.27 Evaluating the efficacy of autumn-winter emission controls in the Beijing-Tianjin-Hebei region
(Gongda Lu, U. Birmingham)
C.28 Simulated severe particulate pollution in China over years of 2013-2018 (Ling Kang, NUIST)
C.29 Changes in ammonia agriculture emissions and their impact on surface PM2.5 pollution in
C.30 Air quality benefits of wind power development in U.S. (Minghao Qiu, MIT)
C.31 Diagnosing the long-term and short-term changes in ozone production sensitivity to precursor
emissions: the view from space (Xiaomeng Jin, LDEO/Columbia)
C.32 Modelled and measured fine-scale spatiotemporal variability in AOD and PM$_{2.5}$ across the
Colorado Front Range (Michael Cheeseman, CSU)
C.33 Seasonal variations and long-term trend of dust particle number concentration over the
Northeastern United States (Yanda Zhang, SUNY-Albany)

3:00 Coffee break

3:15-4:30 Working group breakouts
- **Carbon gases Working Group** (chairs: Kevin Bowman, JPL; Dylan Jones, U. Toronto) – Maxwell-Dworkin G115
- **Aerosols Working Group** (chairs: Colette Heald, MIT; Fangqun Yu, SUNY-Albany; Becky Alexander, U. Washington; Jeff Pierce, CSU) – Geological Museum 100

4:45-6:00 Working group breakouts
- **Adjoint Model and Data Assimilation Working Group** (chairs: Daven Henze, U Colorado; Jun Wang, U. Iowa) – Maxwell-Dworkin 119
- **GEOS-Chem high performance (GCHP) Working Group** (chairs: Sebastian Eastham, MIT; Randall Martin, Dalhousie) – Geological Museum 100

6:00-8:00 **Poster Session C** (chair: Dylan Millet, U. Minnesota)
   Refreshments and dinner buffet
   (please take down your poster when you leave)
Day 4: Thursday May 9

8:30  Coffee, tea, pastries

**Air quality** *(chair: Yuxuan Wang, U. Houston)*

9:00  Meteorology of ozone episodes in North American summers from 1980 to 2018 (Charlie White, U. Toronto)

9:10  Transport of ozone for San Antonio (Wei Li, U. Houston)

9:20  Long-term trend of particle number concentrations in the United States and implications (Fangqun Yu, SUNY-Albany)

9:30  Improving surface PM$_{2.5}$ forecast using an ensemble of satellite data, chemistry transport model outputs, and surface observations (Jessie Zhang, U. Iowa)

9:40  Investigating biomass burning aerosol in North America (Tess Carter, MIT)

9:50  Response of Hurricane Harvey’s rainfall to anthropogenic aerosols (Amir Souri, Harvard-Smithsonian CFA)

10:00 Investigation of anthropogenic influence on VOCs and SOA in the southeast US (Yiqi Zheng, U. Alaska Fairbanks)

10:10 GEOS-Chem adjoint inversion of SO$_2$ and NO$_x$ emissions with multi-sensor (OMPS, OMI, and VIIRS) data over China (Yi Wang, U. Iowa)

10:20 Source contributions to ambient fine particulate matter for Canada using GEOS-Chem (Jun Meng, Dalhousie)

10:30 Coffee break

10:45-11:15  **Model Clinic 4: GEOS-Chem on the AWS Cloud** (Jiawei Zhuang and Bob Yantosca, Harvard) – Maxwell-Dworkin G125

10:45-11:15  **Model Clinic 5: GEOS-Chem in Earth system models** (Christoph Keller, NASA; Sebastian Eastham, MIT) – Maxwell-Dworkin G115

11:15-11:45  **Model Clinic 6: GEOS-Chem nested model** (Yuxuan Wang, U. Houston; Lin Zhang, PKU) – Maxwell-Dworkin G115

11:15-11:45  **Model Clinic 7: GEOS-Chem adjoint model** (Daven Henze and Yanko Davila, U. Colorado) – Maxwell-Dworkin G125

11:15-11:45  **Discussion of GEOS-Chem benchmarking process and outputs** (Mat Evans, U. York, discussion lead) – Pierce 100F

12:00  Lunch on your own

1:00  Open discussion on model development priorities and other GEOS-Chem topics (Daniel Jacob, Harvard, discussion lead) – Maxwell-Dworkin G115

2:30  Meeting adjourns

3:00-4:00  GEOS-Chem Steering Committee meeting (open to all) – Pierce 100F

3:00-5:00  GEOS-Chem on the AWS cloud: hands-on workshop led by Nick Ragusa (AWS) and Jiawei Zhuang (Harvard) – Maxwell-Dworkin G115