

# Agenda for GCE3 (3<sup>rd</sup> Regional GEOS-Chem Europe User's Meeting) 18-20 August 2025

<https://geoschem.github.io/gce3.html>

## Talk time allocations:

GEOS-Chem overview talks: 20 min (15-16 min talk; 4-5 min Q&A)

Keynote talks: 30 min (25-26 min talk, 4-5 min Q&A)

Science/Software engineer talks: 15 min (12-13 min talk, 2-3 min Q&A)

Poster summaries: 1 min

## **Day 0, Monday 18 August**

**Location: First floor, room 20, UCL Engineering Building, Malet Place**

17:00 Early career event (details forthcoming)

17:00 Ice Breaker

17:30 Grant Writing Workshop

18:45 Bloomsbury Bowling

## **Day 1, Tuesday 19 August**

**Location: Gideon Scheier LT room 124, Bentham House (UCL Laws), Endsleigh Gardens**

### **Day 1 Morning Session 1: Model Overview and Opening Talks**

Session Chair: Colette Heald

Slides loaded by Connor Barker

08:30-09:00 Registration

09:00-09:20 Welcome. Meeting and GEOS-Chem Model Overview, Eloise Marais, UCL

09:20-09:40 Broadening Scope of GEOS-Chem, Seb Eastham, Imperial

09:40-09:55 GEOS-Chem Software Engineers / Support Team update, Bob Yantosca, Harvard

09:55-10:10 Chemical uncertainties in chemistry transport modelling, Mat Evans, York Uni

10:10-10:25 Investigating increasing levels of carbon monoxide across southern extratropical latitudes, Clara Nussbaumer, ETH Zurich

10:25-10:30 **POSTER SUMMARIES:**

Inverse modeling of satellite and <sup>13</sup>C observations highlights the role of wet tropics in driving the 2020–2022 methane surge, Zhen Qu, North Carolina State Uni

Climate impact of atmospheric methane removal strategies, Qimin Sun, U. Edinburgh

Implementation of the Global Forest Fire Emissions Prediction System in GEOS-Chem, Timothé Payette, Montréal Uni

**10:30-11:00: Break (tea/coffee provided). Put up posters**

### **Day 1 Morning Session 2: Air quality and atmospheric composition**

Session Chair: Eloise Marais

Slides loaded by Bex Horner

11:00-11:30 **KEYNOTE:** Using global and regional climate models to estimate the impacts of climate change and urbanisation on health, Clare Heaviside, UCL

11:30-11:45 Multiphase HONO formation pathways in Central London, Eleanor Gershenson-Smith, UCL

- 11:45-12:00 Improved surface NO<sub>2</sub> estimates over India using satellite retrievals and modelling, Ardra Divakaran, IIT Delhi.
- 12:00-12:10 **POSTER SUMMARIES:**
- Characterizing the air quality and health impacts from oil and gas emissions in Mexico using GCHP, Omar Nawaz, Cardiff Uni.
- Future projection of global air pollution in 2060, Hiroo Hata, AIST
- Modelling southern Africa air pollution, Mbavhalelo Maliage, U. York
- Assessing the need for heterogeneous production of small acids in GEOS-Chem using DC8 aircraft observations, Huilin Zhan, UCL

**12:10-14:00: Put up posters and Lunch (plenty of options in Fitzrovia, Bloomsbury and beyond)**

### Day 1 Afternoon Session 1: ECMWF / GEOS-Chem gas-phase chemistry (mostly halogens!)

Session Chair: Seb Eastham

Slides loaded by Eleanor Gershenson-Smith

- 14:00-14:30 **KEYNOTE:** ECMWF products and activities of appeal to the GEOS-Chem community Vincent-Henri Peuch, ECMWF
- 14:30-14:45 Understanding chlorine chemistry in GEOS-Chem, Amy Lees, U. York
- 14:45-15:00 The role of iodine chemistry in a changing climate, Ryan Pound, U. York
- 15:00-15:15 The importance of speciated iodine aerosol in gas-phase reactive iodine abundance, Alli Moon, U. Washington
- 15:15-15:30 Impacts of aromatic peroxy radical chemistry on atmospheric ozone, Stephen MacFarlane, U. Wollongong
- 15:30-15:35 **POSTER SUMMARIES:**
- Present day impacts of road transport on atmospheric chemistry and public health in India using GEOS-Chem, Karn Vohra, U. Birmingham
- Impacts of the GAINS LRTAP MTR emission scenario in Europe for 2040, Coralina Hernández Trujillo, CIEMAT
- Spatial and diurnally varying lightning NO<sub>x</sub> production rates for use in GEOS-Chem, Bex Horner, UCL
- A GPU-Accelerated ALE Solver for Low-Diffusion Plume Transport, Oliver Marx, Imperial
- 15:35 Group Photo

### Day 1 Afternoon Session 2: Posters, Refreshments and Networking

- 15:45-17:30 Poster Session, Hub on the First floor of Bentham House
- 17:30 Take down posters, Conclusion of Day 1

## Day 2, Wednesday 20 August

**Location: Gideon Scheier LT room 124, Bentham House (UCL Laws), Endsleigh Gardens**

### Day 2 Morning Session 1: Biosphere-Atmosphere Interactions

Session Chair: Zhen Qu

Slides loaded by Oliver Marx

- 09:15-09:45 **KEYNOTE:** Modelling atmospheric compositions with the EMEP atmospheric chemistry transport model, Massimo Vieno, UKCEH
- 09:45-10:00 Integration of atmospheric chemistry and terrestrial biogeochemistry to advance the understanding of global nitrogen cycle, Cheng Gong, Max Planck Institute for Biogeochemistry
- 10:00-10:15 Evaluating the effects of variability in biomass burning emission inventories on modeled smoke concentrations: Insights from the 2019 and 2021 Canadian wildfire seasons, Samaneh Ashraf, Montréal Uni
- 10:15-10:30 Influence of humidity-dependent stomatal conductance of VOCs on ozone and secondary organic aerosols (SOA), Connor Barker, UCL

**10:30-11:00: Break (tea/coffee provided)**

### Day 2 Morning Session 2: Persistent Pollutants

Session Chair: Mat Evans

Slides loaded by Connor Barker

- 11:00-11:30 **KEYNOTE:** Met Office dispersion modelling tools for pollen and air quality, Lucy Neal, UK Met Office
- 11:30-11:45 PFAS species in the Arctic, Freja F. Oesterstroem, Aarhus Uni.
- 11:45-12:00 Development and applications of the AWS-based Integrated Methane Inversion (IMI) tool for quantifying methane emissions with satellite observations, Daniel Varon, MIT
- 12:00-12:15 High-resolution modelling of greenhouse gases in the Greater Toronto Area using WRF-GEOS-Chem, Christian DiMaria, U. Toronto
- 12:15-12:30 Modelling the atmospheric degradation of HFO-1234ze, Beth Killen, UNSW Sydney
- 12:30-12:45 Sectoral top-down emission estimates using TEMPO and LEO satellite observations, Zhen Qu, North Carolina State Uni.

**12:00-13:30: Lunch (plenty of options in Fitzrovia, Bloomsbury and beyond).**

### Day 2 Afternoon Session: Multiphase Chemistry

Session Chair: Daniel Varon

Slides loaded by Bex Horner

- 13:30-14:00 **KEYNOTE:** Modelling the sources and fate of reduced sulfur compounds in the marine atmosphere, Alex Archibald, UK NCAS and U. Cambridge
- 14:00-14:15 Global impacts of organic aerosol phase state, Yumin Li, ETH Zurich
- 14:15-14:30 Updates on wet scavenging and its impacts on horizontal and vertical aerosol distributions, Gan Luo, SUNY-Albany
- 14:30-14:40 Closing Remarks (Seb + Eloise)
- 14:45 Meeting adjourns