

**Attendee Pack for the 2nd Regional GEOS-Chem Europe User's Meeting (GCE2)
at University College London (UCL) on 14-16 August 2023**

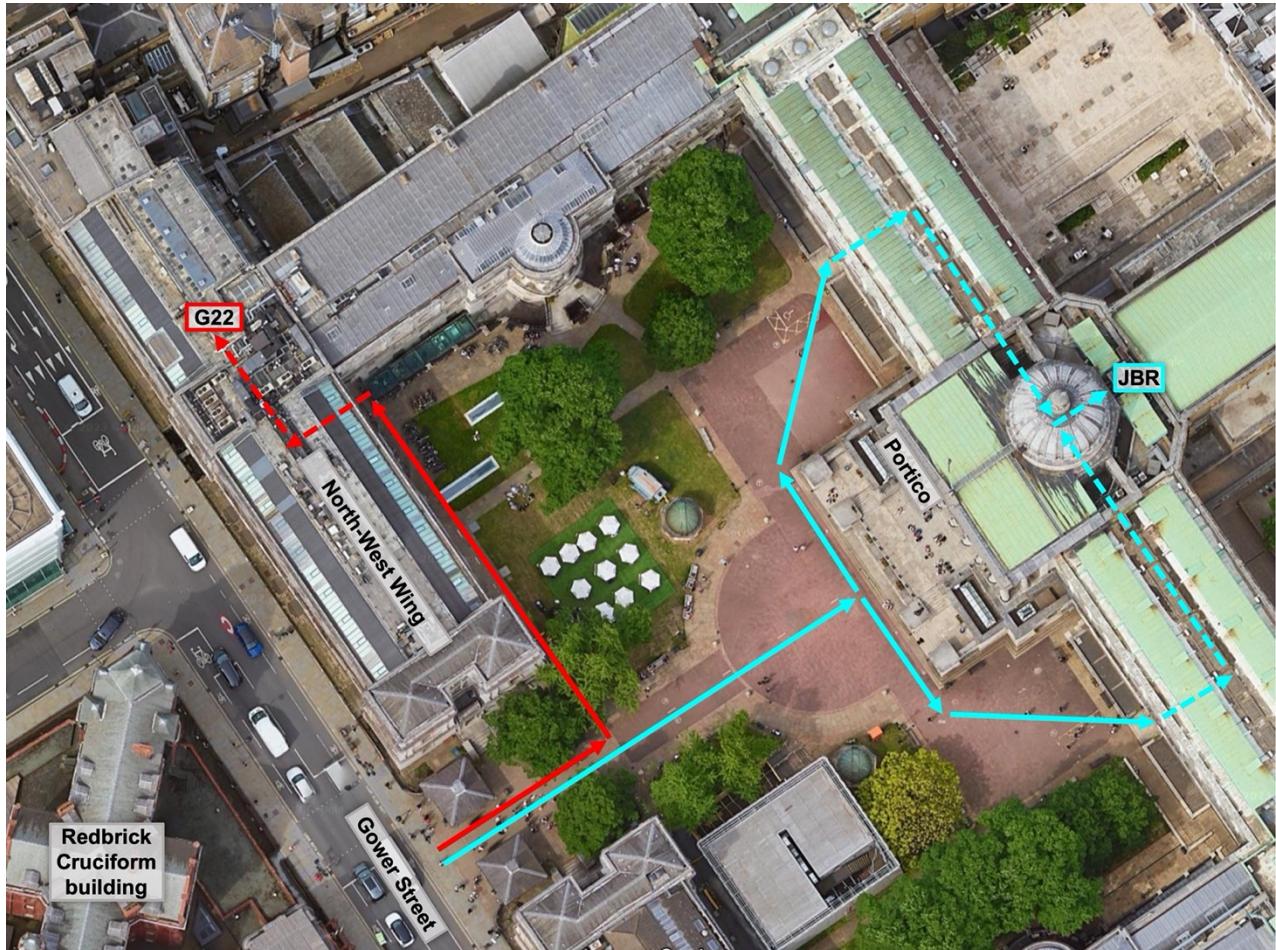
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Directions to UCL Campus

Public transport directions to train stations and bus stops within walking distance of UCL campus: <https://www.ucl.ac.uk/maps/public-transport/>.

Directions to GCE2 venues from main UCL campus entrance on Gower Street:



Red arrows: Day 1 venue (North-West Wing Room G22)

Cyan arrows: Days 2-3 venue (Portico Building, Jeremy Bentham Room)

For G22, enter the main UCL campus gates on Gower Street opposite the impressive looking redbrick Cruciform Building. As you enter, the building on the left is the North-West Wing. The main building entrance is not accessible to the public, as it requires UCL card access. To access the GCE2 venue, turn left to walk along the outside of the North-West Wing building until you reach a glass door to enter the building on your left. Enter here and turn right, following signs to room G22.

For the Jeremy Bentham Room (JBR), head straight through the main UCL camp's gates to reach the bottom of the Portico (Greek column style) building stairs, turn left to enter the building at the entrance indicated, turn right to reach the dome passing the main UCL library entrance on your left, then turn left to head up the stairs to the Jeremy Bentham Room. Alternately, turn right at the bottom of the stairs to reach the JBR in the opposite direction.

If you need help finding anything, there are lots of friendly security personnel to help you.

Wi-Fi:

Recommended: **eduroam**
(via your institute login credentials)

Otherwise use **UCLGuest**

Instructions to use **UCLGuest** WiFi:

1. Select **UCLGuest** from your list of available Wi-Fi networks
2. Once connected, open a web browser and refresh your page
3. At the Welcome page (image below) click **Go**



4. If you already have a The Cloud account, enter your email address and password and click **Continue**. If you do not have a The Cloud account, click **Create Account** to register (indicated in image below)

GCE2 Agenda

Time allocation of talks:

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

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

Science talks: 15 min (12 min talk, 3 min Q&A)

Poster summaries: 1 min

Day 1, Monday 14 August

Location: Room G22, North-West Wing building

Day 1 Afternoon Session 1: Meeting and Model Overview

Session Chair: Karn Vohra, UCL

Slides loaded by Eleanor Gershenson-Smith

13:30-14:00 Registration

14:00-14:20 Welcome and meeting overview, Eloise Marais, UCL

14:20-14:40 GEOS-Chem Model Overview, Randall Martin, WUSTL

14:40-15:00 GEOS-Chem Technical Overview, Melissa Sulprizio, Harvard

15:00-15:20 GCHP Demonstration, Killian Murphy, York

15:20-15:50 Tea/Coffee Break

Day 1 Afternoon Session 2: Emissions

Session Chair: Matthew Rowlinson, York

Slides loaded by Eleanor Gershenson-Smith

15:50-16:10 European Emissions for GEOS-Chem, Mat Evans, York

16:10-16:25 Assessing HTAP NOx Emissions in Cities in South and Southeast Asia using TROPOMI, Gongda Lu, UCL

16:25-16:40 Implementing an improved parameterisation for inorganic iodine emissions in GEOS-Chem, Ryan Pound, York

16:40-16:55 An inverse modelling framework to estimate the GHG emissions for the UK, Alex Kurganskiy, Edinburgh.

16:55 Adjourn for the day

Day 2, Tuesday 15 August

Location: Jeremy Bentham Room, Portico building

Day 2 Morning Session 1: Models to Motivate Action

08:30-09:00 Tea/Coffee available

Session Chair: Alex Kurganskiy, Edinburgh

Slides loaded by Gongda Lu

9:00-9:30 **KEYNOTE:** The use of atmospheric chemistry models in air pollution activism, Jamie Kelly, Centre for Research on Energy and Clean Air (CREA)

9:30-9:45 Investigating climate co-benefits using GEOS-Chem adjoint sensitivities, Omar Nawaz, GWU

- 09:45-10:00 Early deaths, asthma exacerbation and cancer risks linked to air pollution from each major oil and gas lifecycle stage in the US, Karn Vohra, UCL
- 10:00-10:15 Evaluation of the atmospheric impact of supersonic emissions from the SCENIC project on a 2050 atmosphere, Jurriaan van 't Hoff, TU Delft
- 10:15-10:30 Impacts of megaconstellation satellite launches and end-of-life satellite disposal on stratospheric ozone and climate, Connor Barker, UCL
- 10:30-10:40 Poster summaries (1 min each):
 Modeling biomass burning impacts on air quality in Canada, Samaneh Ashraf, UdeM
 Spatio-temporal variability of atmospheric mercury over India by using ground-based observations and GEOS-Chem model simulations, M.Chakradhar Reddy, IIT-Madras
 Using GEOS-Chem for retrieval of vertical profiles of atmospheric composition over Central London, Eleanor Gershenson-Smith, UCL
 Exploring the impact of biogenic and pyrogenic emissions in South America with GEOS-Chem and satellite data, Susie Shihan Sun, Edinburgh

10:40-11:10 Tea/Coffee break [with GCST Helpdesk]

Day 2 Morning Session 2: Particles Great and Small

Session Chair: Hansen Cao, York

Slides loaded by Nana Wei

- 11:10-11:30 **KEYNOTE:** Plastic aerosols - what do we know?, Stephanie Wright, Imperial College London
- 11:30-11:45 Advances in Simulating the Global Spatial Heterogeneity of Air Quality using GCHP and Its Implications for the Relation of AOD with PM_{2.5}, Dandan Zhang, WUSTL
- 11:45-12:05 Porting GEOS-Chem Chemistry to External Models, Lizzie Lundgren, Harvard
- 12:05-12:15 Poster summaries (1 min each):
 Exploring marine boundary layer halogen chemistry using GEOS-Chem, Amy Lees, York
 Global simulation of tropospheric halogen multiphase chemistry, Hansen Cao, York
 Development of versatile Python software to retrieve tropospheric vertical profiles of NO₂ and ozone from satellite observations, Gongda Lu, UCL
 The impact of diurnal variation in African wildfires on atmospheric chemistry, Haolin Wang, Sun Yat-sen U.
 Climate effect of biomass burning aerosol from key biomass burning regions, Shuaiyi Shi, Edinburgh

12:15-13:50: Lunch break.

Day 2 Afternoon Session 1: Modelling to Inform Environmental Policy

Session Chair: Connor Barker, UCL

Slides loaded by Gongda Lu

- 13:50-14:10 **KEYNOTE:** How the UK Department for the Environment, Food and Rural Affairs (DEFRA) uses air quality models to inform policy, Alison Davies, DEFRA
- 14:20-14:35 Emerging capabilities for GEOS-Chem Meteorological datasets, Saptarshi Sinha, WUSTL
- 14:35-14:50 Sensitivity of Air Quality (AQ) in Eastern Canada to Transboundary Pollution and Meteorology: Understanding Potential Climate-AQ Feedbacks, Robin Stevens, UdeM.
- 14:50-15:15 Present-day and next mid-century estimates of global aviation impacts on air quality, Flávio, TU Delft
- 15:05-15:20 Effects of model resolution on simulated air quality impacts from aviation, Seb Eastham, MIT

15:20-15:35 UK public health and ecosystem benefits from adopting technically feasible emissions controls throughout Europe, Eloise Marais, UCL

Day 2 Afternoon Session 2: Posters and Networking

15:35-18:00 Poster session and networking with drinks and snacks

Day 3, Wednesday 16 August

Location: Jeremy Bentham Room, Portico building

Day 3 Morning Session 1: Tropospheric composition (mostly ozone) part 1

08:30-09:00 Tea/Coffee available

Session Chair: Susie Shihan Sun, Edinburgh

Slides loaded by Connor Barker

- 9:00-9:30 **KEYNOTE:** The role of atmospheric non-linearities in understanding aviation emissions' impacts, Irene Dedoussi, TU Delft
- 9:30-9:45 Why is tropospheric ozone around 40 ppbv?, Mat Evans, York
- 9:45-10:00 Why is background ozone over East Asia so high?, Nadia Kathryn Colombi, Harvard
- 10:00-10:15 Evaluation of GEOS-Chem vertical profiles of nitrogen dioxide (NO_2) and ozone (O_3) using cloud-sliced TROPOMI columns, Bex Horner, UCL
- 10:15-10:35 Meeting photo

10:35-11:00 Tea/Coffee break [with GCST Helpdesk]

Day 3 Morning Session 2: Tropospheric composition (mostly ozone) part 2

Session Chair: Gongda Lu, UCL

Slides loaded by Connor Barker

- 11:00-11:15 The rise and rise of atmospheric methane: an unfolding story about hotspots and wet spots, Paul Palmer, Edinburgh
- 11:15-11:30 Implementation of an observationally-constrained nitrate photolysis parameterisation and the impact on tropospheric ozone, Mathew Rowlinson, York
- 11:30-11:45 Reactive nitrogen and ozone in the global upper troposphere: Insights from historic DC8 aircraft campaigns and GEOS-Chem, Nana Wei, UCL
- 11:45-11:55 Closing remarks, Eloise Marais, UCL
- 11:55 Meeting Adjourns

Presenter Instructions

Talk durations and suggested number of slides:

GEOS-Chem overview talks: 15-16 min (14-16 content slides))

Keynote talks: 25 min (20-25 content slides)

Science talks: 12 min (10-14 content slides)

Poster summaries: 1 min (1 slide)

Poster printing:

Same-day A0 printing available at Nevex Printing (<https://nevex.co.uk/academic-posters-printing/>) located at St Pancras / King's Cross Station about 15 min walk from UCL. Posters can be displayed as portrait or landscape.

Slide uploads:

Upload slides to the UCL Dropbox online application (<https://www.ucl.ac.uk/dropbox/>) at least 24 hours prior to your talk.

Click on the Dropbox link, then click on the “drop off” link:

The screenshot shows a web browser window with the URL <https://www.ucl.ac.uk/dropbox/> in the address bar. The page has a blue header with the UCL logo and the text "UCL Dropbox". Below the header, there are two sections: one for UCL users (with a "login" button) and one for other people (with "drop off" and "pick up" buttons). A red arrow points to the "drop off" button. At the bottom, there are two notes about file types and legal restrictions, followed by the UCL Information Services Division logo and a small illustration of a cardboard box with an arrow pointing into it.

If you are a University College London user, you may

- to access restricted features.

Other people may either:

→ • (upload) a file for a University College London user, or

- (download) a file left for them by a UCL user.

Note: This facility should not be used for unencrypted files containing confidential, private or personal information.

Note: This facility must not be used to distribute material that is illegal, causes a breach of copyright, or contravenes the UCL Computing Regulations (<http://www.ucl.ac.uk/isd/regulations>)

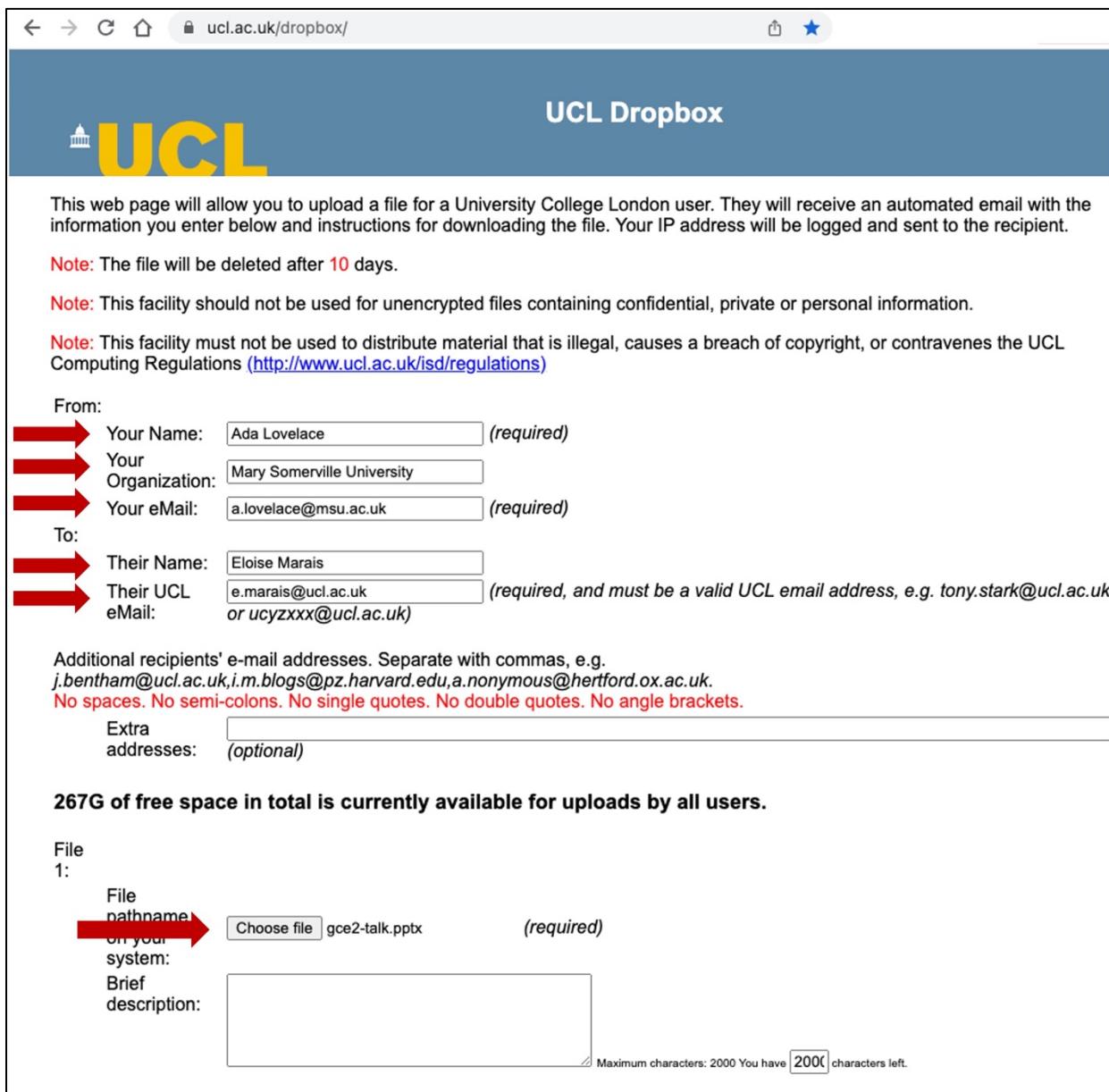
UCL - Information Services Division
Acknowledgement with gratitude to Duke Scott, EECIS,
University of Delaware



This will take you to an electronic form shown below. Fill in your name, your organization name and email. Fill in receiver name (Eloise Marais) and email address (e.marais@ucl.ac.uk). Upload file. The Dropbox file size limit is very large.

Please only upload Powerpoint format slides. Not PDF. Please use Widescreen slide size (16:9 aspect ratio) to prepare your slides.

For poster summaries, please only prepare one slide. Additional slides will be deleted.



The screenshot shows the UCL Dropbox upload interface. At the top, there's a blue header bar with the UCL logo on the left and 'UCL Dropbox' text on the right. Below the header, a note states: "This web page will allow you to upload a file for a University College London user. They will receive an automated email with the information you enter below and instructions for downloading the file. Your IP address will be logged and sent to the recipient." Three red arrows point from the left towards the 'From:' section. The 'From:' section contains fields for 'Your Name' (Ada Lovelace), 'Your Organization' (Mary Somerville University), and 'Your eMail' (a.lovelace@msu.ac.uk). The 'required' label is in parentheses next to the 'Your Name' field. The 'To:' section also has three red arrows pointing from the left. It contains fields for 'Their Name' (Eloise Marais), 'Their UCL eMail' (e.marais@ucl.ac.uk), and 'eMail' (or ucyzxxx@ucl.ac.uk). The 'eMail' field includes a note: "(required, and must be a valid UCL email address, e.g. tony.stark@ucl.ac.uk)". Below the 'To:' section, there's a note about additional recipients' e-mail addresses, separated by commas, with examples like j.bentham@ucl.ac.uk, i.m.blogs@pz.harvard.edu, a.nonymous@hertford.ox.ac.uk. It also specifies rules: "No spaces. No semi-colons. No single quotes. No double quotes. No angle brackets." There's a field for "Extra addresses" which is marked as optional. A large bold note at the bottom says "267G of free space in total is currently available for uploads by all users." On the left side, there's a section for "File 1:" which includes a "File pathname" field containing "on your system:", a "Brief description" text area, and a "Choose file" button with the path "gce2-talk.pptx". A note indicates "(required)" in parentheses next to the file path. At the bottom right, there's a character limit notice: "Maximum characters: 2000 You have 2000 characters left."

Lunch Options On and Near Campus:

Grab and Go:

* *options on campus*

Tottenham Court Rd food market in front of the American International Church

Market/street food stalls in front of Euston Church

*Fold Pizza Shop: <https://www.foodatucl.com/fold-pizza-shop/>

*Print Room Café: <https://studentsunionucl.org/eat-drink-shop/cafes/print-room-cafe>

Garden Kiosk in Gordon's Square (city park)

Cabmen's Shelter in Russell Square (city park)

*George Farha Café: <https://studentsunionucl.org/eat-drink-shop/cafes/george-farha-cafe>

*Gordon's Café: <https://studentsunionucl.org/eat-drink-shop/cafes/gordons-cafe>

Outdoor spots to eat grab & go lunch if weather permits:

UCL main quad

UCL Japanese garden

Russell Square

Gordon Square

Sit down options with efficient service:

Roti King: <https://www.rotiking.com/>

Franco Manca (chain with store in Tottenham Court Rd)

Noodle & Snack (145 Cleveland St)

Honey and Spice: <https://honeyandco.co.uk/places/honey-spice/>

Gail's Bakery (chain with store in Bloomsbury)

Dillons Coffee in the multistorey Waterstone's book store

Tourist Attractions On and Near Campus:

The British Museum: <https://www.britishmuseum.org/>

Wellcome Collection: <https://wellcomecollection.org/>

UCL Petrie Museum of Egyptian Archaeology: <https://www.ucl.ac.uk/culture/petrie-museum>

Charles Dickens Museum: <https://dickensmuseum.com/>

Foundling Museum: <https://foundlingmuseum.org.uk/>

The Crypt Gallery: <http://cryptgallery.org/>

List of Attendees:

53 attendees (41 in-person, 12 remote) from 25 institutions and 11 countries

In person Attendees

Name	Institution
Adedayo Adedeji	King's College London, UK
Samaneh Ashraf	University of Montreal, Canada
Connor Barker	University College London, UK
Hansen Cao	University of York, UK
Nadia Kathryn Colombi	Harvard University, USA
Alison Davies	UK DEFRA
Irene Dedoussi	TU Delft, Netherlands
Flávio Domingos de Azevedo Quadros	TU Delft, Netherlands
Seb Eastham	MIT, USA
Mat Evans	University of York, UK
Liang Feng	University of Edinburgh, UK
Eleanor Gershenson-Smith	University College London, UK
Jayashree Ghosh	University of East Anglia
Bex Horner	University College London, UK
Jamie Kelly	Centre for Research on Energy and Clean Air
Alex Kurganskiy	University of Edinburgh, UK
Amy Lees	University of York, UK
Gongda Lu	University College London, UK
Lizzie Lundgren	Harvard University, USA
Eloise Marais	University College London, UK
Randall Martin	WUSL, USA
Killian Murphy	University of York, UK
M. Omar Nawaz	George Washington University, USA
Paul Palmer	University of Edinburgh, UK
Ryan Pound	University of York, UK
M.Chakradhar Reddy	IIT – Madras, India
David Rowley	University College London, UK
Matthew Rowlinson	University of York, UK
Shuaiyi Shi	University of Edinburgh, UK
Saptarshi Sinha	WUSTL, USA
Robin Stevens	University of Montreal, Canada
Melissa Sulprizio	Harvard University, USA
Parv Suntharalingam	University of East Anglia, UK
Susie Shihan Sun	University of Edinburgh, UK
Hiroshi Tanimoto	NIES, Japan
Jurriaan van 't Hoff	TU Delft, Netherlands
Karn Vohra	University College London, UK

Haolin Wang	Sun Yat-sen University
Nana Wei	University College London, UK
Stephanie Wright	Imperial College London, UK
Dandan Zhang	WUSTL

Remote Attendees

Name	Institution
Salah Eddine	Mohammed V University, Morocco
Luke Fakes	University of York, UK
Ari Feinberg	MIT, USA
Matthew Loman	University of Rochester, USA
Abrial Lunar	TAMU Corpus Christi, USA
Sherry Luo	University of Lille, France
Pradhi Rajeev	IIT – Patna, India
Saroj Kumar Sahu	Utkal University, India
Puneet Kumar Verma	Physical Research Laboratory, India
Bob Yantosca	Harvard University, USA
Xueying Yu	Stanford University, USA
Minjie Zheng	ETH, Switzerland