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# IGACnews

facilitating atmospheric chemistry research towards a sustainable world

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## Manchester 2022



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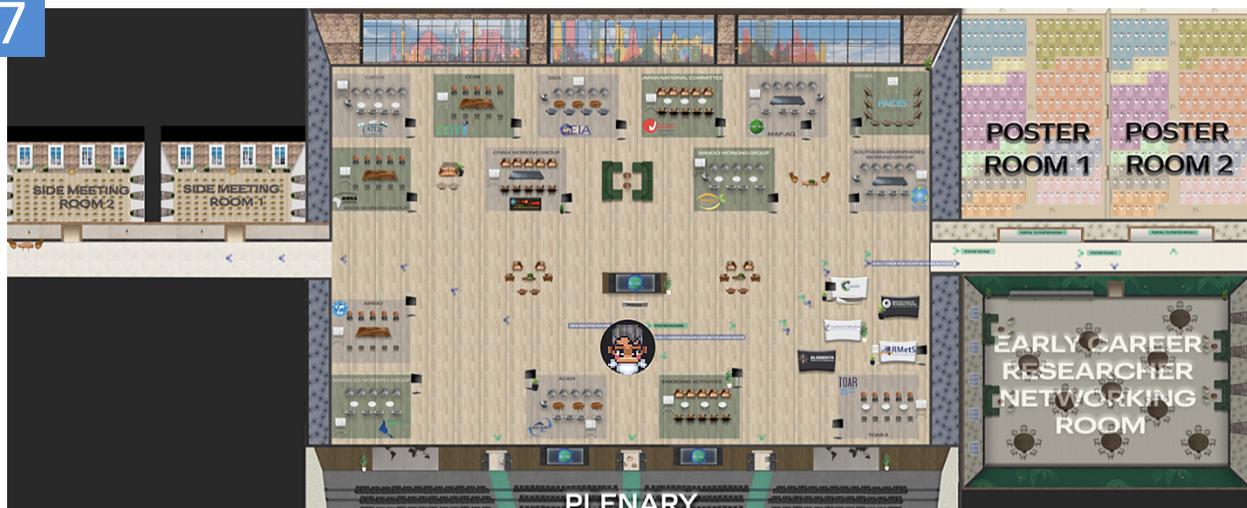
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Image courtesy of Marketing Manchester



IGAC was formed in 1990 to address growing international concern over rapid changes observed in Earth's atmosphere. IGAC operates under the umbrella of Future Earth and is jointly sponsored by the international Commission on Atmospheric Chemistry and Global Pollution (iCACGP). The IGAC International Project Office is hosted by the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado and is sponsored by the US National Science Foundation (NSF), National Oceanic and Atmospheric Association (NOAA), and National Aeronautics and Space Administration (NASA). Any opinions, findings, and conclusions or recommendations expressed in this newsletter are those of the individual author(s) and do not necessarily reflect the views of the responsible funding agencies.

## Community Engagement

As we slowly and carefully emerge from two years of pandemic protocols, the issue of community is high on my mind. I started specifically thinking about the IGAC community recently, when I completed a class from the Center for Scientific Collaboration and Community Engagement (CSCCE.org) on Community Engagement Fundamentals (CEF).

IGAC's mission is to "facilitate atmospheric chemistry towards a sustainable world," but, what does that mean in a practical sense? What does IGAC do, exactly? Who are members of the IGAC community, what are their goals, and how do they interact? What barriers are there to participation in IGAC?

In the community engagement fundamentals class, we learned a lot about building, sustaining, and evolving a network over time. We were also introduced to their 'community participation model' (see here). In this community participation model, members interact in different levels, from convey/consume (for IGAC e.g., reading this newsletter), to contribute (e.g., writing articles for this newsletter; giving a talk at an IGAC conference), to collaborate (e.g., working in a working group, drafting an IGAC report), to co-create (e.g., creating a new working group or activity).

In this issue of IGACNews, you will see a lot of information about the past IGAC 2021 virtual conference and the upcoming iCACGP-IGAC2022 hybrid conference in Manchester, UK. IGAC is known for its biannual international conferences, and that seems to be how the majority of atmospheric chemists interact within the IGAC community. IGAC conferences are ways that people can contribute to the IGAC community by giving talks and posters, collaborate afterwards on new endeavors after finding peers at the conferences, and consume information.

There are a lot of other ways that the atmospheric chemistry community can and does interact under the IGAC umbrella. IGAC strives to be a community-led organization with opportunities for co-creation and programming beyond the biannual IGAC conferences. We accept proposals from the community for new activities (centered around a scientific question in atmospheric chemistry that needs international collaboration to answer) and working groups (to build regional community and capacity). We have expectations for these groups (listed here) and regular reviews but otherwise leave decisions on the running of each group

to their leaders/proposers. The expectations document is an example of scaffolding, or a formal framework for participation in a community. Groups themselves develop their own scaffolding. As the IGAC community is large, these subgroups allow for more personal interactions and leadership from the community.

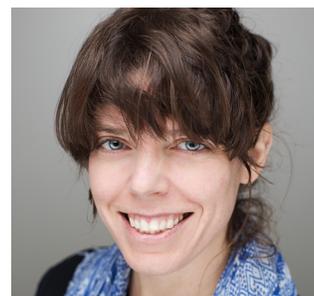
In 2019, the IGAC Scientific Steering Committee added the goal of 'engaging society' to IGAC's focus, along with 'advancing knowledge', 'building capacity', and 'fostering community.' The goals of advancing knowledge, building capacity, and fostering community have defined IGAC content and activities associated with each (working groups, activities, conferences, newsletters). However, engaging society remains a lofty and vague goal. In the coming months, we want to break down this goal into who (who are we trying to engage), what (are their goals and how could they overlap with IGAC's mission? What scaffolding will be needed for starting new activities?), how (what programming and content will help engagement and serve both IGAC's needs and the community member's needs?), and when (should we begin engagement).

IGAC is lucky to have a large community with many years of history behind it. Regularly checking in with the IGAC members, their needs and barriers to participation, and what needs our programming and content answers, will help IGAC grow in a sustainable way. I encourage you all to think systematically about your community when building new activities and working groups. And, please start thinking about ways you would like to see IGAC evolve, as in the coming year we will be taking feedback from the community on all these topics! 

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### IGAC DIRECTOR

**Langley Dewitt** serves as IGAC director to facilitate international collaboration on atmospheric chemistry to advance the field towards a sustainable world. Langley has worked as a consultant air monitoring specialist for industry in the Houston area, helped establish a climate observatory and air quality monitoring network in Rwanda, and worked on air quality and tropospheric atmospheric chemistry issues in France and the US.



## IGAC Welcomes 6 New SSC Members



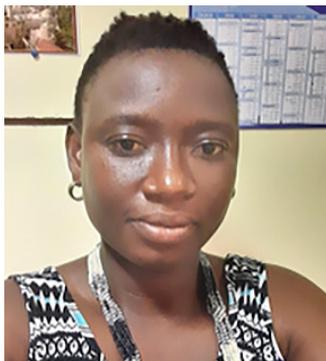
**Dr Aderiana Mbandi**  
UNEP and South Eastern Kenya  
University

**Dr Aderiana Mbandi** is a chemical engineer with 16 years of experience in manufacturing, hazardous chemicals and waste, climate change, mobility and air pollution. She supervises and teaches at the South Eastern Kenya University, as well as working for UNEP, African Governments and sits on various scientific advisory groups including the African Group of Atmospheric Sciences (ANGA). She also works with the UN high Level Climate Champions on Open Waste Burning in Africa. Aderiana is an alumna of the Faculty for the Future fellowship by the Schlumberger Foundation for women in Science Technology Engineering Mathematics (STEM). She received her PhD from University York, UK where her research sought to support evidence-based air quality management policy by assessing the impact of transport emissions on human health and the environment with a focus on African cities. Aderiana is also a co-founder of AfriSTEM Connection, a company working to increase STEM and sustainability awareness using emerging technologies in underserved communities in Africa.

**Astrid Kiendler-Scharr** is scientific director of the institute for tropospheric research IEK-8, at Forschungszentrum Jülich and full professor at University Cologne, Physics, since 2012. She studied physics at Innsbruck university, Austria and did her PhD at the Max Planck Institute for Nuclear Physics, Heidelberg in Germany. Since her PhD thesis she is an expert in the development and application of mass spectrometric techniques for the detection of trace species in the atmosphere. Her research focus is on atmospheric chemistry and the formation of secondary aerosols. She was lead author of the IPCC sixth assessment report chapter on short lived climate forcers. Since 2021 she is also chair of the German climate consortium, DKK.



**Astrid Kiendler-Scharr**  
Forschungszentrum Jülich and University Cologne



**N'Datchoh E. TOURE** is a researcher at the Laboratoire des Sciences de la Matière, de l'Environnement et de l'Énergie Solaire (LASMES) of the Université Félix Houphouët-Boigny (UFHB) in Côte d'Ivoire. She completed her Ph.D. in 2015 from the Federal University of Technology Akure (FUTA) in Nigeria. Her Ph.D. work focused on the West African aerosols and their climate impacts within the framework of West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) and International Centre for Theoretical Physics (ICTP) Sandwich Training Educational Programme (STEP) scholarships. Following her graduation, she earned a postdoctoral position in Laboratoire d'Aerologie of Toulouse (France) where she worked on climate modeling and investigating uncertainties in African biomass emission inventories and atmospheric pollution impact on human health.

Her team research in LASMES focuses on air pollution and its impacts on climate, weather, and human health in the West African region. Within this team, she focuses on aerosols and their impacts, as well as climate change. She has co-authored about twenty peer-reviewed articles published in international climate journals. She is contributing as coordinating lead author African Assessment of Air Pollution and Climate Change. She is also a member of the implementation team of the African Group on Atmospheric Sciences (ANGA), an International Global Atmospheric Chemistry (IGAC) working group. She is also a member of the MAP-AQ steering committee a project sponsored by WMO/GAW and IGAC. She has recently joined the Scientific Advisory Panel (SAP) of the Climate and Clean Air Coalition (CCAC).



**Owen Cooper**  
CIRES, University of Colorado  
Boulder

**Owen Cooper** is a senior Research Scientist in the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado Boulder. He works closely with government scientists in NOAA's Chemical Sciences Laboratory in Boulder, Colorado.

Owen received his Bachelor of Science degree in Environmental Sciences from the University of North Carolina – Chapel Hill in 1994, and his PhD from the Department of Environmental Sciences at the University of Virginia in 2001. That same year he moved to Boulder where he has been ever since.

With the goal of conducting scientific research that is highly relevant to public health issues and policy development, Owen's interests pertain to: regional and intercontinental transport of atmospheric trace gases, dust and aerosols; trends in U.S. and global air quality; the global tropospheric ozone budget and trends; and stratosphere-troposphere exchange processes.

Owen is an author on 118 peer-reviewed publications and has contributed to several assessment reports including the fifth and sixth IPCC assessment reports, the annual State of the Climate Reports, and the Task Force on Hemispheric Transport of Air Pollution. In 2014 he established IGAC's Tropospheric Ozone Assessment Report (TOAR) and has continuously served in TOAR leadership rolls.

Further information on his work can be found here:

<https://csl.noaa.gov/staff/owen.r.cooper/>



**Dr R Subramanian**  
Qatar Environment & Energy  
Research Institute

**Dr R Subramanian** is a Senior Scientist at the Environment and Sustainability Center (ESC) of the Qatar Environment & Energy Research Institute (QEERI), where he leads QEERI's research on sensors for air quality and climate emissions monitoring. He is also a research fellow at the Kigali Collaborative Research Centre (Kigali, Rwanda), a visiting researcher at OSU-Efluve/CNRS (Creteil, France), and an adjunct professor in the Department of Mechanical Engineering at Carnegie Mellon University (Pittsburgh, PA, USA).

Subramanian's research career includes chemical characterization and source apportionment of ambient organic aerosol and PM<sub>2.5</sub>, single-particle measurements of black carbon and BC mixing state, emissions characterization for cook stoves and vehicles, and characterization of methane emissions from natural gas facilities. Recent accomplishments include leading the development of the Real-time Affordable Multi-Pollutant (RAMP) monitor, co-leading the deployment of a 50-RAMP network in and around Pittsburgh, PA, and establishing the Africa qualité de l'air (AfricAir) monitoring network, a collaborative international effort using reference-grade and lower-cost monitors in many cities across Sub-Saharan Africa. He completed a PhD in Mechanical Engineering at Carnegie Mellon University in 2004.



**Vinayak Sinha**  
IISER, Mohali

**Vinayak Sinha** is an Associate Professor at the Indian Institute of Science Education and Research Mohali (IISER Mohali) located in north-west India, where as the Founder Head he contributed to establishing the Department of Earth and Environmental Sciences. He completed his Bachelors in Science (BSc with Honours in Chemistry) and Master in Science (MSc: specialization in organic chemistry of natural products) in 2002 from Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam and subsequently completed a Master of Technology (M. Tech) in Analytical Chemistry from the Indian Institute of Technology, Delhi in 2004. Prior to joining IISER Mohali in August 2010, he worked at the Max Planck Institute for Chemistry in Mainz, Germany for six years from 2004-2010 as a doctoral and postdoctoral research scientist.

His current research is focussed on investigations of emissions, atmospheric chemistry and air quality feedbacks as well as source apportionment of gases and fine mode aerosol in megacities. The investigations combine experimental tools such as proton transfer reaction mass spectrometers, gas chromatography and spectroscopic techniques with satellite remote sensed data, chemical box models and chemical transport models for comprehensive understanding. He set up the state-of-the-art IISER Mohali Central Atmospheric Chemistry facility in the north-west Indo-Gangetic Plain where atmospheric composition and meteorology measurements for >100 chemical and physical parameters including VOCs at ultra-trace level (ppt-ppb) are being made continuously since 2011. Ozone chemistry, hydroxyl radical reactivity, molecular chemical fingerprinting of air-pollution sources, volatile organic compounds, mass spectrometric measurements of atmospheric chemical composition and development of India-wide VOC emission inventories using measured emission factors and updated activity data are some of his key areas of expertise and recent contributions.

He is currently serving as a member of the Scientific Steering Committee of the International Commission on Global Atmospheric Chemistry and Air Pollution. Previously he has served as Co-chair of the Scientific Steering Committee of the Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS), from 2014-2020, as Editor (Subject: Atmospheric Chemistry and Physics) for Earth System Science Data published by EGU from 2010-2020 and as a member of the Scientific Advisory Committee of Aryabhata Research Institute of Observational Sciences (ARIES, Nainital, India), Member of the Atmospheric Chemistry Advisory and Monitoring Committee in Ministry of Earth Sciences, India, and been a Co-chair of (WG1) of the Atmospheric Composition in the Asian Monsoon (ACAM), as well as a contributor to the Third Ozone Assessment Report (TOAR).



# IGAC Says Goodbye to Two SSC Members!

**Dr. Manish Naja** is a senior scientist and vice-chair of Solar Physics and Atmospheric Science group at ARIES, Nainital. During his time at IGAC, he was very involved in MANGO and part of the ACAM activity. Manish remains a MANGO co-chair. His major research interest has been in the observations of the trace gases using surface based, ship-borne and balloon-borne instruments. He has been involved in INDOEX (Indian Ocean Experiment), GOSAT (Greenhouse Gases Observing SATellite), GVAX (Ganges Valley Aerosol Experiment) programs. Now, he is actively involved in studying the influence of long-range transport, regional air-pollution and air quality over South Asia utilizing regional and box models and satellite data. He is the PI of ISRO's (Indian Space Research Organization) AT-CTM (Atmospheric Trace gases Chemistry Transport and Modeling) and ARFI (Aerosol Radiative Forcing over India) projects at ARIES. A wind profiler (Stratosphere-Troposphere Radar) is also coming-up at ARIES and he is leading this facility. He is also heading academic committee at ARIES, which is responsible for the PhD program of the Institute.

**Dr. Gregory Frost** is a Supervisory Research Chemist at the National Oceanic and Atmospheric Administration (NOAA) Chemical Sciences Laboratory (CSL) in Boulder, Colorado. Dr. Frost received his PhD in Physical Chemistry from the University of Colorado, Boulder. He leads CSL's Regional Chemical Modeling program, which uses observations and models to understand the impacts of atmospheric emissions and chemistry on air quality, weather, and climate change. Dr. Frost is the Atmospheric Composition and Chemistry Liaison in NOAA's Office of Oceanic and Atmospheric Research. He serves as the Program Manager for the NOAA Earth's Radiation Budget initiative. He led the value assessment of an atmospheric composition capability on NOAA's Next-Generation Geostationary Extended Observations (GeoXO) Missions. Dr. Frost co-chaired the Global Emissions Initiative (GEIA), an IGAC activity, for many years.

We will miss Manish and Greg and thank them for volunteering their time to serve on the IGAC Scientific Steering Committee and guide IGAC! 🍌

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## Submit articles to the next IGACnews

IGACnews is always happy to receive relevant journal article summaries, event summaries, perspectives, and other articles from the community. Please email [info@igacproject.org](mailto:info@igacproject.org) with ideas or for more info.



13-17 SEPTEMBER 2021  
ONLINE

IGAC Sponsored

# IGAC 2021 Summary

**I** IGAC's first fully online conference was held from 13-17 September 2021. The conference was centered around IGAC's current regional working groups and scientific activities. The conference highlighted the work that the IGAC community is doing to increase regional networking among atmospheric chemists in traditionally underserved areas, and to advance knowledge on scientific questions that need international collaboration to address.

The conference was kicked off by a great plenary talk from Dr. Paul Monks, a professor at Atmospheric Chemistry and Earth Observations and the Head of the Science and Engineering College at Leicester College. He presented a discussion on Papers that Shaped Tropospheric Chemistry (see here for the paper in Atmospheric Chemistry and Physics). Afterwards, there was a lively Q&A discussing what makes a study impactful, what research has proven to be the most impactful over time for atmospheric chemistry, and future directions.

During the conference, each working group and activity had a two-hour oral session, along with a special session on COVID and air quality. With expert technical help from the University Corporation for Atmospheric Research (UCAR), talks were streamed online and questions were taken from the audience via the Sli.do app.

The oral sessions and scientific programming committee for each session were:

## REGIONAL WORKING GROUPS

1. ANGA (African Group on Atmospheric Sciences): Engineer Bainomugisha, University of Makerere, Uganda; Michael Gatari, University of Nairobi, Kenya; Rebecca Garland, Council for Scientific and Industrial Research, South Africa; Hamza Merabet, Centre de Développement des Energies Renouvelables, Algeria; Andriannah Mbandi, South Eastern Kenya University, Kenya; Robert Mbiake, University of Douala, Cameroon; Phenny Mwaanga, The Copperbelt University, Zambia; Peter Odjugo, Nigerian Meteorological Agency, Nigeria; N'Datchoh Evelyne Touré, University Felix Houphouet Boigny, Cote d'Ivoire
2. AWG (Americas Working Group): Olga Mayol-Bracero, Universidad de Puerto Rico, Puerto Rico; Marcos Andrade (Co-Chair), Universidad Mayor de San Andrés, Bolivia; Nestor Rojas, Universidad Nacional de Colombia, Colombia; Laura E. Dawidowski, Comisión Nacional de Energía Atómica (CNEA) Chemical Department, Buenos Aires, Argentina
3. China Working Group: Tong Zhu, Peking University, China, Mei Zhang, Peking University, China
4. Japan National Committee: Yugo Kanaya, JAMSTEC, Japan; Hiroshi Tanimoto, National Institute for Environmental Studies, Japan; Nobuyuki Takegawa, Tokyo Metropolitan University, Japan; Michihiro Mochida, Nagoya University, Japan; Masayuki Takigawa, JAMSTEC, Japan
5. Mango (Monsoon Asia and Oceania Working Group): Hiroshi Tanimoto, National Institute for Environmental Studies, Japan; Manish Naja, Aryabhata Research Institute of Observational Sciences, India; Liya Yu, National University of Singapore, Singapore; Abdus Salam, University of Dhaka, Bangladesh

6. Southern Hemisphere: Clare Murphy (Paton-Walsh), University of Wollongong, Australia; Pieter van Zyl, North West University, South Africa; Nicholas Huneus, University of Chile, Chile; Gustavo Olivares, NIWA, New Zealand

## ACTIVITIES

1. PACES (Air Pollution in the Arctic: Climate, Environment, and Societies): Steve Arnold, University of Leeds, UK; Kathy Law, LATMOS, France
2. AMIGO (Analysis of Emissions Using Observations): Claire Granier, Observatoire Midi-Pyrénées, Université de Toulouse, France and NOAA/ESRL & CU/CIRES, USA; Avelino Arellano, University of Arizona, USA; Jenny Stavrakou, BIRA-IASB, Belgium
3. ACAM (Atmospheric Composition and the Asian Monsoon): Mian Chin, NASA, USA; Hans Schlager, DLR, Germany
4. CCMi (Chemistry-Climate Model Initiative): David Plummer, Environment and Climate Change, Canada; Tatsuya Nagashima, NIES, Japan
5. GEIA (Global Emissions Initiative): Gregory Frost, NOAA Chemical Sciences Laboratory, Boulder, CO, USA; Catherine Liousse, Laboratoire d'Aerologie, Toulouse, France
6. MAP-AQ (Monitoring, Analysis, and Prediction of Air Quality): Rajesh Kumar, NCAR, USA; Guy Brasseur, Max Planck Institute for Meteorology, Germany
7. CATCH (the Cryosphere and Atmospheric Chemistry): Jennie Thomas, University of Grenoble, France; Thorsten Bartels-Rausch, PSI, Switzerland; Markus Frey, British Antarctic Survey, UK
8. TOAR-II (Tropospheric Ozone Assessment Report II): Owen R. Cooper, CIRES University of Colorado/NOAA Chemical Sciences Laboratory, Boulder, CO, USA; Martin G. Schultz, Forschungszentrum Jülich, Germany
9. COVID-19 and Air Quality Special Session: Astrid Kiendler-Scharr, Forschungszentrum Jülich, Germany
10. In addition to the scientific program committee members associated with specific working groups and activities, the IGAC scientific steering committee also served on the scientific programming committee. Those not already listed above in connection with a working group or activity are James Crawford, NASA Langley, VA, USA; Lisa Emberson, University of York, UK; Louisa Emmons, NCAR, USA; Christian George, CNRS, France; Pieter Levelt, NCAR, USA; and Kerri Pratt, University of Michigan, USA.

Full schedule details and speakers can be found from links [here](#).

Each oral session had a corresponding poster section, and there were additional poster sections for Biomass Burning and Fundamentals & Futures. Poster sessions took place in **gather.town**, an online conference platform built to encourage casual interaction and discussion. Poster sessions took place each day and each session had three presentation times, to encourage participation across different time zones.

While tracking exact online attendance was impossible, there were over 900 registrants from 59 countries, and up to 350 people online at one time. Over 60% of our presenters were early career scientists. To honor the research presented by these early career scientists, and to encourage future engagement with IGAC, a number of early career scientist poster prizes were awarded.

One winner from each poster category was chosen by a committee of established scientists, and each winner will receive a free registration to the next IGAC Conference in September 2022, Manchester, UK! If needed, winners will also receive travel funds. Honorary mentions will not receive registration or travel funds but were chosen to be highlighted for their strong contributions. Note that because many posters had cross-cutting scientific content, some poster winners and honorary mentions were chosen for a category that they did not present in, but for which their poster was relevant. Posters are still available for viewing [here](#) (use the poster codes after each named winner and honorary mention to find the posters in the poster rooms. You can find the abstracts of all presenters in the conference booklet [here](#)!

## POSTER PRIZEWINNER LIST

### Biomass Burning

WINNER: Fabiola Trujano for the poster The impact of biomass burning emissions on Protected Natural Areas in central and southern Mexico BB-5B

#### *Honorary Mentions*

Ryan Farley BB-9C

Rudra Pokhrel BB-11B

### Japan National Committee

WINNER: Astrid Mueller for the poster How well can satellite derived XCO<sub>2</sub> determine seasonal and interannual changes of CO<sub>2</sub> over oceans? Evaluation by integrated ship and aircraft observations AMIGO-9C

*Honorary Mentions*

Kohei Ono JNC-16A  
Tamaki Fujinawa JNC-8B

**Mango**

WINNER: Shahid Zaman for the poster Indoor Air Quality Indicators and Toxicity Potential at the Hospitals' Environment MANGO-1A

*Honorary Mentions*

Sreyashi Debnath MANGO-6C  
Cong-Thanh Tran MANGO-3C

**ACAM**

WINNER: Priyanka Srivastava for the poster Decadal trend of black carbon aerosols over the Central Himalayas: 17 years of ground observations ACAM-30A

*Honorary Mentions*

Meike Rotermund ACAM-5B  
Prashant Singh ACAM-1A  
Mingchen Ma GEIA-44B

**CCMI**

WINNER: Marios Chatziparaschos for the poster Dust minerals in the atmosphere as precursors of Ice Nuclei Particles CCMI-52A

*Honorary Mentions*

Surendra Kunwar CCMI-24C  
Olivia Clifton CCMI-6C  
Max Coleman CCMI-11B  
Nana Wei CCMI-21C  
Maegan DeLessio CCMI-41B

**COVID-19**

WINNER: Shan Wang for the poster Hourly Organic Tracer-based Source Apportionment of PM<sub>2.5</sub> before and during the COVID-19 lockdown: A Case Study on Suburban Shanghai COVID-26B

*Honorary Mention*

Mariano Mertens COVID-18C

**Fundamentals and Futures**

WINNER: Zijun Li for the poster Unveiling Processes in Secondary Organic Aerosol Particles during Isothermal Evaporation FF-13A

*Honorary Mentions*

Fabian Mahrt FF-4A  
Yuanyuan Wang FF-25A

**AMIGO**

WINNER: Jacob Shaw for the poster Globally Significant methane fluxes from African tropical wetlands AMIGO-33A

*Honorary Mentions*

Wentai Zhang AMIGO-35C  
Carlos Gonzales AMIGO-46A

**CATCH**

WINNER: Sakiko Ishino, for the poster Oxidation of methanesulfonate into sulfate at inland Antarctica evidenced by 17O- excess signature CATCH 7A

**Southern Hemispheres**

WINNER: Sive Xokashe for the poster Prediction of Aerosol acidity in the remote marine boundary layer of the Southern Ocean during summer SH-13A

*Honorary Mentions*

Adhitya Sutresna SH-15C  
William Daniels SH-16A

**GEIA**

WINNER: Ashish Kumar for the poster A new "hybrid" gridded 1 km × 1 km emission inventory for paddy stubble burning reveals that stubble burning is a massive source of VOCs unaccounted for by existing emission inventories and overwhelms other anthropogenic activities over the Indo-Gangetic Plain GEIA-34A

*Honorary Mentions*

Guilherme Martins Pereira GEIA-48C  
Xiatong Wang GEIA-21C  
Karl Seltzer GEIA-35B

**TOAR-II**

WINNER: Maria Zamyatina for the poster Local and global impacts of C1-C3 alkyl nitrate chemistry and emissions on tropospheric ozone TOAR-13A

*Honorary Mentions*

Andrea Orfanoz-Cheuquelaef TOAR-12C  
Simon Rosanka TOAR-10A

**PACES**

WINNER: Johannes Barten for the poster Role of oceanic ozone deposition in explaining short-term variability of surface ozone at high-Arctic sites CATCH-4A

*Honorary Mentions*

Meeta Cesler-Maloney PACES-13A  
Jakob Pernov CATCH-20B



## ANGA

WINNER: Patricia van der Walt for the poster  
Simulated fine particulate air pollution attributable  
to coal-fired power in the Highveld MAPAQ-64A

### *Honorary Mentions*

Karn Vohra AMIGO-5B  
Flossie Brown TOAR-40A  
Sekou Keita ANGA-10A

## China Working Group

WINNER: Qionqiong Wang for the poster:  
Estimation of heterogeneous ozone oxidation rates  
of oleic, elaidic, and linoleic acid in urban organic  
aerosols using their hourly measurement data  
CHINA-11B

## Americas WG

WINNER: Bighnaraj Sarangi for the poster  
Development of an Aerosol and Cloud Analysis  
System in the Caribbean MAPAQ-90C

### *Honorary Mentions*

Beatriz Herrera AMERICAS-4A  
Melisa Diaz Resquin MAPAQ-50B  
Ramiro Espada SH-5B

## MAP-AQ

WINNER: Daniel Rodriguez-Rey for the poster  
Modelling the impact of urban traffic management  
strategies on emissions and air quality levels in  
Barcelona (Spain) MAP-AQ4A

### *Honorary Mentions*

Carlos Souto-Oliveira MAPAQ-44B  
Minghao Qiu MAPAQ-15C  
Mriganka Biswas MAPAQ-62B  
Evelyn Martinez MAPAQ-83B  
Laura Judd MAPAQ-25A

## Special Thanks

Special thanks to Bret Batterman and Paul  
Martinez from UCAR event services for producing  
the plenary sessions and AMSL for creating the  
IGAC **gather.town** conference space. 🍷

If you have recently published an  
IGAC-relevant article and wish for  
it to be highlighted in IGACnews,  
please submit the citation to [info@  
igacproject.org](mailto:info@igacproject.org)



## IGAC ON SOCIAL MEDIA

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in an effort to further advance international  
scientific cooperation and serve as a resource  
to the public, especially you. Please join us  
to stay apprised of the most current news on  
conferences, workshops and publications.  
Let us hear from you on how to improve the  
international conversation, @IGACProject.

# ECS Poster Prize Winner Profiles

## Sarangi Bighnaraj



### Where are you from?

I am from India. Currently working in Atmospheric Chemistry and Aerosol Research (ACAR), UPRRP, PR, USA.

### Where did you receive your undergraduate and graduate degrees and in what subjects?

Undergraduate degree: Ravenshaw University, Cuttack, Odisha, India

Graduate degree: Ravenshaw University, Cuttack, Odisha, India

Ph.D.: Academy of Scientific & Innovative Research (AcSIR), CSIR-NPL, New Delhi, India

### Where and what is your current position?

Postdoctoral Fellow

Atmospheric Chemistry and Aerosols Research (ACAR)

Department of Environmental Science

University of Puerto Rico - Rio Piedras

San Juan, PR 00925-2537, USA

### What is your current area of research?

Currently I am working on two research areas

National Science Foundation funded project: Development of an Aerosol and Cloud Analysis System to study the multiple interactions between aerosols and clouds in the Caribbean.

NASA ROSES funded project: Investigation of optical characteristics of dust aerosols during extreme dust events in the Caribbean.

### How has COVID-19 been affecting your research and your life?

There is no doubt that COVID-19 has impacted research and life in several aspects. Most of my research work involved observation-based studies. So virtually working was a bit difficult during the COVID-19 pandemic. However, the COVID duration enabled me to learn how to stay safe and connected personally and professionally to others through the virtual world.

### What advice can you offer to those just starting a masters or PhD program in atmospheric chemistry?

My advice is for newcomers in Masters and Ph.D. in Atmospheric Chemistry is that they are on the right path to achieve excellence in their research goal. There are numerous scopes/opportunities to do research and explore new science in Atmospheric Chemistry. Students in their early research career should learn to conduct experiments or involve in field projects in Atmospheric Chemistry.

# Ashish Kumar



### Where are you from?

I come from Shimla, a small Himalayan town in India.

### Where did you receive your undergraduate and graduate degrees and in what subjects?

I received both my undergraduate chemistry degree (integrated Bachelors and Masters in Chemical Science) and PhD in Experimental Atmospheric Chemistry from the Indian Institute of Science Education and Research Mohali, India.

### Where and what is your current position?

I am currently working as a postdoctoral researcher at the University of York.

### What is your current area of research?

I am currently working on the NERC funded project (INGENIOUS) on the Indoor Air Quality. During my PhD, I worked with Dr Vinayak Sinha and studied the emissions and sources of volatile organic compounds and their impact on the outdoor air quality in North India, particularly the emissions from paddy stubble burning and traffic.

### Pursuing or earning a doctorate degree in the field of atmospheric chemistry is not an easy task. What challenges have you had to overcome to get to where you are now?

Some of the challenges that I faced during my PhD were: the effort, pain and frustration of running the analytical instruments and them behaving absurdly bad at critical times, and presenting an interesting and cohesive story from the large amounts of acquired data. I am sure these would resonate with several other researchers too in the field of atmospheric chemistry.

In my experience, to overcome the challenges associated with instrumentation, the only viable route is to keep on learning. One has to get the grasp over the functioning of all the nook and crannies of the instrument in order to familiarise with the data generated. The instrument manuals and the infinite learning resources on the internet are the go-to bible, and the guidance (and hacks!) from experienced technical/engineering staff are priceless. The key thing to remember is that even the “bad” data that comes out of the instrument is not waste as it is helpful during the troubleshooting.

Another thing to remember is that not all the data generated by these instruments will be useful in your scientific quest. It is always ideal to have certain pre-identified research targets, which may require only a fraction of your whole data to answer them. The key is not get lost in the oceans of data trying to explain everything possible in one paper or project. Work smart along with working hard.

### What advice can you offer to those just starting a masters or PhD program in atmospheric chemistry?

My first advice would be to learn a coding language. Presently, the field of atmospheric chemistry is so enriched with the large amounts of data from measurements and from satellites, that one has to have knowledge of R, python or MATLAB for a quick and robust analysis. You would not only avoid the pain of working on large (and painfully slow!) excel sheets, but also save a lot of time that you could use for other projects or simply for recreation! The working knowledge of writing coding scripts will also help you in easier understanding and familiarisation with the atmospheric modelling techniques, which will be essential for your overall career development as a “complete” atmospheric scientist. Looking back now, I feel that I could have saved myself a lot of time and trouble only if I had learnt these programming languages.

Secondly, try to engage with the atmospheric research community via conferences, workshops, meet-ups etc. Now with the growing option of virtual mode of such meetings, one can also do networking

## early career spotlight

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from the comforts of their home/office. You will not only learn about new and upcoming researcher methodologies but also get several valuable suggestions and insights for your work that would be very useful. Many of these people are the peer-reviewers or in the selection committee for research grants and positions. The critical inputs and suggestions you get from them therefore assist in better communication of your research and grant applications. Most of all, it will impart you with the professional confidence to succeed in academia.

### Where are you most at home during work? Is it in the lab, writing papers, doing field research or in front of a crowd giving a talk on your research?

Personally, I feel the most comfortable working with the instruments in the lab or deploying them in the field. I feel at home with the chaotic and uncertain nature of field works.

### What and/or who motivated you to pursue a career in science and more specifically in atmospheric chemistry?

I was trained as a synthetic organic chemist during my undergraduate studies. However, I felt detached from the

outside world

while working with the chemicals in the lab. I always wanted to pursue a research career that had visible societal impacts. It was during that time that I became aware of the deteriorating air quality over Northern India, especially the problem of crop residue burning. I understood that in order to tackle this issue, the impervious attitude of the common public and the administration had to be altered. They had to be made aware of the problem, its causes and possible solutions. It was then I transitioned into the field of atmospheric chemistry, where I could use my experience as organic chemist, to study the sources and role of organic compounds in deteriorating the regional air quality, with an aim to not only broaden the existing scientific knowledge, but also help the society to tackle poor air quality.

### Outside of science, what are some of your other interests/hobbies?

I love to travel and experience different cultures and cuisine. I am a big "foodie" and love to cook. Apart from this I like to play and watch cricket and football, and listen to rock music.

## Sive Xokashe



### Where are you from?

I am from South Africa (Cape Town)

### Where did you receive your undergraduate and graduate degrees and in what subjects?

I received both my undergrad and Honors degree from The University of Cape Town (UCT), majoring in Chemistry and Oceanography

### Where and what is your current position?

Currently a Second Year Master's student at UCT

Current area of research: Southern Hemisphere atmospheric inorganic aerosols

### What aspect of your research are you most excited about?

Field work and traveling, because it exposes me to adventures and takes me to places that are beyond my wildest dreams. It took me to Antarctica (2019) but also more importantly, it immerses me into a field of science where I get to tackle portions of big questions related to issues ranging from human health, climate change, and ecosystems productivity

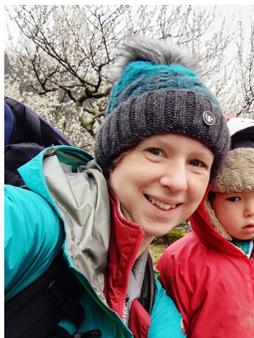
### What aspect of your research are you most excited about?

There were both positives and negatives. The most felt was the setbacks in timelines due to restrictions in labs and in person meetings but also it resulted in new opportunities, where I saw myself attending my very first conference due to the ease of access (virtual) and not worrying about travel costs, as I come from a developing country

### Advise to Master students

Network as early as you can with researchers in your field! It sounds cliché but there is a world of opportunity that lies dormant in those engagements.

# Astrid Mueller



### Where are you from?

Germany

### Where did you receive your undergraduate and graduate degrees and in what subjects?

Undergraduate: Faculty of Biology and Faculty of Forest and Environmental Sciences (Master of Science in Biology and Geography), Albert-Ludwigs University of Freiburg, Germany

Subjects: Biology (Synaptic plasticity and learning processes in the human brain), Geography (Routing applications with user-generated geographic data)

Graduate: Graduate School of Environmental Science, Division of Earth System Science (Doctoral Course), Hokkaido University, Japan

Subject: Atmospheric Chemistry (Studies on the effects of cold terrestrial biogenic emissions of organics on the cloud forming potential of atmospheric aerosols)

### Where and what is your current position?

Research Associate at the National Institute for Environmental Studies (NIES), Japan

### What is your current area of research?

Evaluation of greenhouse gas (GHG) satellite observations over oceans by commercial ship and aircraft observations.

### How did you become part of the IGAC community and do you think as an early career scientist IGAC workshops and conferences will aid or have aided your career as a scientist?

I had my first closer contact with the IGAC community during the 2018 joint 14th iCACGP Quadrennial Symposium/15th IGAC Science conference in Takamatsu, Japan. The conference inspired me and connected me with Dr. Hiroshi Tanimoto, whose group I later joined. Since then, the international conferences and workshops were always a key for me to keep my mind open to different viewpoints and research approaches, challenges, and measurement possibilities in other regions of the world, which is important for a scientist.

### Is there an element or aspect of your research you believe to be particularly important?

I believe my contribution to improve the quality and coverage of greenhouse gas (GHG) observations is particularly important to mitigate the negative impacts of climate change for everyone's life. High quality and high density measurements of GHGs are needed for the implementation of the Paris Agreement and to achieve net-zero GHG emissions as fast as possible.

### Outside of science, what are some of your other interests/hobbies?

I enjoy travelling, hiking, trekking, and dancing. I always like to try out and learn something new. I think, being active and having time for new things creates a space for creativity which is also important for doing science.

### Pursuing or earning a doctorate degree in the field of atmospheric chemistry is not an easy task. What challenges have you had to overcome to get to where you are now?

My major challenge was to finish my doctorate degree after I gave birth to my son. After a break, the return to do science was only possible with the support and kind pushing of my supervisor Dr. Yuzo Miyazaki from the Institute of Low Temperature Science, Hokkaido University.

### Where are you most at home during work? Is it in the lab, writing papers, doing field research or in front of a crowd giving a talk on your research?

I'm most at home doing field work.

# Daniel Rodriguez-Rey



**Where are you from?**  
Spain

**Where did you receive your undergraduate and graduate degrees and in what subjects?**

Barcelona, UPCTech, in Chemical Engineering

University of Birmingham, MSc Air pollution management and control

**Where and what is your current position?**

BSC-CNS, Ph.D student

**What is your current area of research?**

Air quality modeling

**Is there an element or aspect of your research you believe to be particularly important?**

The skill of the designed air quality system to assess policy makers in the design of air quality plans, particularly the ones oriented towards the implementation of traffic management strategies and mobility issues.

**To you, what is the ultimate goal of science? Does this goal have anything to do with why you became a scientist?**

The ultimate goal of science is to use state of the art methodologies to keep building knowledge in a particular field, and contribute to the community, be useful and understandable. It is also very important the scientific dissemination and public divulgation, to be able to arrive to the general public in these particular topics that have a direct impact on society. For me, working and developing with state of the art methodologies instead of applying more traditional methods, was a key factor to become a scientist.

**What and/or who motivated you to pursue a career in science and more specifically in atmospheric chemistry?**

The important impacts that, in my particular case, air pollution caused to both citizens health and climate, including other impacts in ecosystems and economy.

# Ishino Sakiko



**Where are you from?**  
Japan

**Where did you receive your undergraduate and graduate degrees and in what subjects?**

Undergraduate: Tokyo Institute of Technology, in Engineering

Graduate: Tokyo Institute of Technology, in Natural Science

**Where and what is your current position?**

Assistant Professor, Kanazawa University, Japan (at the time of the IGAC 2021: JSPS postdoctoral fellow at National Institute of Polar Research, Japan)

**What is your current area of research?**

Understanding controlling factors of oxygen isotopes ( $\Delta^{17}O$ ) of sulfate and related species, aiming at reconstruction of historical changes in chemical reactions in the troposphere

**How did you become part of the IGAC community and do you think as an early career scientist IGAC workshops and conferences will aid or have aided your career as a scientist?**

I joined the IGAC in 2018 for the first time, when the joint iCACGP and IGAC science conference was held at Takamatsu, Japan. What a fortunate thing is that I joined the short course and all early career programs as a part of the organizing committee, that strongly supported me to build connections with many senior and early career scientists from all around the world. In particular, knowing each other lowers the barrier for reading papers from other field. I keep following publications of the participants of the short course via SNS, and sometimes getting contact for asking questions. I believe this will open the possibility of future collaborations.

**What aspect of your research are you most excited about?**

I am most excited when isotope analyses provide unique evidences about atmospheric chemistry processes that are not derived from concentration measurements only.

# Maria Zamyatina



### Where are you from?

Moscow, Russia

### Where did you receive your undergraduate and graduate degrees and in what subjects?

BSc in Meteorology at the Lomonosov Moscow State University

MSc in Climate Change at the University of East Anglia

PhD in Environmental Sciences at the University of East Anglia

### Where and what is your current position?

Postdoctoral Research Fellow at the University of Exeter

### What is your current area of research?

Astrophysics, exoplanets, chemistry of hot Jupiter atmospheres

### What previous experience did you have with the IGAC community?

I attended the 2018 IGAC conference in Takamatsu, Japan, in the third year of my PhD.

### What and/or who motivated you to pursue a career in science and more specifically in atmospheric chemistry?

What motivated me to pursue a career in atmospheric chemistry was the realization of how important atmospheric composition is for the planetary climate and life. If one considers the Earth's past, life might not have left the oceans if stratospheric ozone did not form. If one considers the present, climate might not have become so dangerously warm if humans stopped using fossil fuels earlier. Tight links between atmospheric composition and climate have huge implications for life, and vice versa, and it is the reason why working in atmospheric chemistry is so interesting and timely.

### What do you want to do with your degree? Where do you see yourself in 3-5 years?

Having a PhD in atmospheric chemistry turned out to be very useful for researching the atmospheres of planets other than Earth. While the atmospheres of planets outside our Solar system are not as well characterized as the Earth's atmosphere, the situation is rapidly changing as more precise telescope observations become available, providing avenues for fundamental research into the formation and evolution of planetary atmospheres.

# Shahid Uz Zaman



### Where are you from?

I am from Bangladesh.

### Where did you receive your undergraduate and graduate degrees and in what subjects?

I have received my undergraduate degree from University of Dhaka, Bangladesh. My major was Chemistry.

### Where and what is your current position?

I am currently pursuing my MS degree and working at the Atmospheric and Environmental Chemistry Research Laboratory, Department of Chemistry, University of Dhaka as a Research Associate.

### What is your current area of research?

My current area of research is aerosol chemistry, assessment of ambient air quality over Dhaka using low-cost sensors.

### What previous experience did you have with the IGAC community?

My previous experience with IGAC was attending the IGAC-Mango scientific workshops, 2019 at Nainital, India. It was my first scientific workshop overseas.

### Outside of science, what are some of your other interests/hobbies?

I enjoy reading books on areas other than science. My favorite subjects are history and psychology. Apart from them, I enjoy watching sports particularly cricket.

### Where are you most at home during work? Is it in the lab, writing papers, doing field research or in front of a crowd giving a talk on your research?

Although I like doing all the above-mentioned things, I find myself at home mostly while writing research papers. Writing research papers is like an art to me.

### Who throughout your life had the greatest impact on you deciding to pursue a career in atmospheric science?

My supervisor Dr. Abdus Salam, Professor, Department of Chemistry, University of Dhaka. He had the most influence on my research career. I've learned a lot about research, especially in the field of air pollution study. He has been a mentor to me for the past 4-5 years, and working with him has been a tremendous experience.

## Zijun Li



### **Where are you from?**

I was born and raised up in a city called Dongguan in the Pearl River Delta region of China.

### **Where did you receive your undergraduate and graduate degrees and in what subjects?**

I completed my bachelor and master study in the surrounding area of my hometown which is nowadays called the Guangdong-Hong Kong-Macao Greater Bay Area. I majored in Environmental Engineering during my undergraduate study at the Jinan University (JNU) in Guangzhou. Afterwards, I had my master study in Environmental Science and Management at the Hong Kong University of Science and Technology (HKUST) in Hong Kong.

### **Where and what is your current position?**

Currently I am a PhD student in the Aerosol Physics Group led by Professor Annele Virtanen at the University of Eastern Finland (UEF) in Finland.

### **What is your current area of research?**

I am investigating the chemical and physical processes during the isothermal evaporation of aerosol particles. Findings from our study will provide more knowledge about how different atmospheric processes affect the volatility of aerosol particles.

### **What previous experience did you have with the IGAC community?**

It was my first time to participate in the IGAC community as an early career scientist. Communicating with atmospheric scientists beyond aerosol chemistry and physics broadens my existing knowledge about atmospheric science. It also makes me rethink about the future directions and collaboration opportunities in the field.

### **What would you like to see IGAC do more of in the future?**

What I enjoyed most in the IGAC Conference are the career sessions in the early career researcher (ECR) program. Nothing is more valuable than hearing experiences and tips from senior atmospheric scientists within and beyond academia. This definitely helps PhD researchers in making career decisions after their graduation and also motivates those who just starts their PhD studies. I hope IGAC can hold more and more ECR sessions in the future.

### **What is the most useful piece of advice you have received from senior scientists you have worked with?**

Believe what you are doing and remember to communicate with scientists around.

# Sjoerd Barten



### Where are you from?

Wageningen, The Netherlands

### Where did you receive your undergraduate and graduate degrees and in what subjects?

Undergraduate: Soil, Water, Atmosphere

Graduate: Earth & Environment with a specialization in Meteorology & Air Quality (Wageningen)

### Where and what is your current position?

PhD candidate at the Meteorology and Air Quality group (Wageningen University)

### What is your current area of research?

Modelling surface exchange of climate-active trace gases in the Arctic

### Is there a goal or dream that you are trying to accomplish as a scientist?

Help to build a better future through meaningful research.

### What advice can you offer to those just starting a masters or PhD program in atmospheric chemistry?

Put serious effort into personal and professional development through courses and activities organized by IGAC and other organizations. Activities such as networking workshops, time-management workshops and outreach have greatly helped me in my professional career and makes you think about your work in a different way.

### What aspect of your research are you most excited about?

A better understanding of the fate of trace gases in the Arctic and help to answer key questions such as, what is the origin of these trace gases, how are they removed from the atmosphere and how will the system look like in a few decades?

# Jacob Shaw



### Where are you from?

I was born in Nottingham, UK, and lived there all my life until I moved to university.

### Where did you receive your undergraduate and graduate degrees and in what subjects?

I graduated from the University of York in 2014 with an MChem in chemistry, and again four years later with a PhD in chemistry. In my PhD research I measured rate coefficients for reactions between atmospheric radicals (OH and Cl) and many volatile organic compounds using a novel technique.

### Where and what is your current position?

I am currently employed as a Research Associate at the University of Manchester, where I have been working with Professor Grant Allen since 2018.

### What is your current area of research?

My research involves measuring and quantifying methane emissions from a number of sources, be they natural, such as wetlands, or man-made, such as oil and gas production facilities, or landfill sites. I make use of a number of different measurement platforms, including research aircraft (including the UK's FAAM and BAS planes) and unmanned aerial vehicles (UAVs) for measuring atmospheric methane.

### Outside of science, what are some of your other interests/hobbies?

I have been an avid swimmer since a young age, competing in national competitions as well as for my university. Sadly the amount of swimming I do has decreased considerably since the onset of the pandemic, to be replaced by lots of reading and the very occasional run or trip to the gym.

### Where are you most at home during work? Is it in the lab, writing papers, doing field research or in front of a crowd giving a talk on your research?

I love writing. It is something that I have been passionate about for a long time, and I get a lot of enjoyment out of putting together a scientific paper. I also miss field research, which has been largely impossible for the past few years, and can't wait to get my hands dirty on the next project whenever that happens. ●

# IGAC 2021 ECS Short Course Summary

A virtual early career program took place the week before the main IGAC 2021 virtual conference. This program was fully planned by an early career scientist (ECS) committee and sought to encourage ECS to network, engage, and learn. Sessions were planned in triplicate to encompass multiple time zones, with sessions for the Americas, Europe/Africa, and AustralAsia.

A number of sessions were open to anyone who wished to attend.

### Open Sessions

- Icebreaker: A chance to find out more about the program, explore and meet other ECS in the Gather platform.
- Upgoer5: A session focused on effective communication of your research to a variety of audiences.
- Careers Panel: A panel discussion focused on career pathways for atmospheric scientists beyond academia. A number of panelists were available for discussion with ECS.
- Career Development in an Ambiguous and Uncertain World: A session discussing issues, ideas and strategies for early career staff with Ellie Highwood, career development coach and former atmospheric scientist.
- EC-ES “Lunch”: An open networking session in Gather for early career scientists to meet with established scientists.

In addition to the open events, professional facilitator **Christine Bell** hosted an application-limited three part workshop, done in triplicate over the three time zone regions. These three sessions were:

- Getting to know you and exploring atmospheric chemistry.
- Discovering the secrets of successful collaborators and how to develop your career as one!
- Exploring potential.

Participation was limited to 40 people per time zone to ensure a small-group feel and plenty of personal interactions.

The online tools Zoom, Gather.town, and Mural were used during the ECS program to facilitate interactions and communication.

An international committee of early career scientists raised the funds, planned the events, and executed the virtual short course. The IGAC community greatly thanks them for all of their leadership. Their profiles are shown below. In addition to the scientists leading the committee a number of early career researchers also volunteered to help run the events. They were Renu Masiwal, Yange (Grace) Deng, Shyno Susan, Brigitte Language, Sebastian Diez, Alexandra Lai, Tanzina Akther, Pamela Dominutti, and Jun Zhang. 

## IGAC 2021 ECS committee profiles



### Matt Amos

 <https://orcid.org/0000-0002-1166-0915>

 <https://twitter.com/mattamosphere>

 <https://scholar.google.co.uk/citations?user=OWb1628AAAAJ>

 [https://www.research.lancs.ac.uk/portal/en/people/matt-amos\(4afa0f23-e45e-4a20-811f-cd278e81a02e\).html](https://www.research.lancs.ac.uk/portal/en/people/matt-amos(4afa0f23-e45e-4a20-811f-cd278e81a02e).html)

Matt's work focuses on analysing output from chemistry-climate model ensembles and merging research from both data scientists, statisticians and environmental modellers. He was fortunate to attend IGAC2018 in Takamatsu and plans to learn from this experience to be part of the team creating an exciting programme for early-career scientists when IGAC is next hosted in Manchester.



### Tomás Rafael Bolaño Ortíz

 <https://orcid.org/0000-0002-0033-6001>

 [https://twitter.com/tomas\\_rafael](https://twitter.com/tomas_rafael)

 <https://scholar.google.com/citations?user=rMvQeLcAAAAJ>

Tomás is a postdoctoral researcher at the National Technological University (FRM-UTN) in Argentina. His work focuses on the study of the cryosphere-atmosphere interaction using remote sensing data and chemical analysis of Light-absorbing particles in snow samples, which lead to the accelerated melting of snowpack in the Central Andes mountains of Argentina and Chile in South America. He hopes to help organize the early career program at the 16th IGAC Scientific Conference.



## Olivia Clifton

 <https://orcid.org/0000-0002-1669-9878>

 <https://twitter.com/oliviACLIFTON1>

 <https://scholar.google.com/citations?user=7qEtLpIAAAAJ>

 <https://oliviACLIFTON.com/>

Olivia Clifton is NASA Postdoctoral Program Fellow at NASA Goddard Institute for Space Studies in New York. Olivia was an Advanced Study Program Postdoctoral Fellow at the National Center for Atmospheric Research in Boulder, Colorado from 2018 through early 2021, and received her PhD in 2018 from Columbia University. Olivia's interests include land-atmosphere interactions and tropospheric chemistry, in particular the dry deposition of reactive gases and aerosols relevant for air quality, ecosystems, and climate. Olivia is excited to meet other early careers during IGAC to build community and learn what they find most fascinating about atmospheric chemistry.



## Emily Matthews

 <https://twitter.com/EmilyMa02686449>

Emily Matthews is a PhD student at the University of Manchester and her research focuses on analysing trace gas measurements made over the North Atlantic Ocean using mass spectrometry techniques. In particular, Emily is interested in using observations to identify and understand novel marine trace gases and their implications for the Earth System. Emily is looking forward to networking with other early careers researchers and contributing to the IGAC community.



### Archit Mehra

-  <https://orcid.org/0000-0002-4273-8199>
-  <https://twitter.com/DrArchitMehra>
-  [https://scholar.google.com/citations?user=uD\\_DSmlAAAAJ](https://scholar.google.com/citations?user=uD_DSmlAAAAJ)
-  <https://architmehra.com/>

Archit Mehra is the chair of the IGAC 2021 early careers programme committee. He completed his PhD at The University of Manchester using online mass spectrometry to study aerosol and trace gas composition relevant to urban air pollution, with a focus on Beijing. He is currently a postdoctoral researcher at The University of Chester working on indoor air quality. His focus is on chemistry in the built environment, using low-cost instrumentation and data science approaches to explore the complexity of real-time measurements.



### Frederick Otu-Larbi

-  <https://orcid.org/0000-0001-6991-1871>
-  [https://twitter.com/larbi\\_fred](https://twitter.com/larbi_fred)
-  [https://scholar.google.com/citations?user=Bb2\\_hpgAAAAJ&hl=en](https://scholar.google.com/citations?user=Bb2_hpgAAAAJ&hl=en)

I hold a Phd in Environmental Science from Lancaster University. My interests include earth-system modelling, climate and environmental advocacy and science communication. My research is focused on the interactions between biosphere and atmosphere and the feedbacks between them. In particular, I study the mechanisms driving the emissions, photochemical oxidation, vertical mixing and deposition of reactive trace gases within forest canopies, and how atmospheric pollutants like ozone affect plant growth and productivity.



### Xiang Peng

Xiang PENG is currently working at China National Environmental Monitoring Centre. Xiang just received her Ph.D. from the Hong Kong Polytechnical University in July 2021. Xiang's interest includes reactive halogen chemistry, photochemical pollution, and the chemical box model. Xiang's work was published at National Science Review, Environmental Science & Technology Letters, and Atmospheric Chemistry and Physics.



### Tomás Sherwen



<https://orcid.org/0000-0002-3006-3876>



<https://twitter.com/DrTomasS>



<https://scholar.google.co.uk/citations?user=e3SmNJoAAAAJ&hl=en>



<https://www.york.ac.uk/chemistry/staff/resstaff/sherwent/>

Tomás Sherwen received a PhD from the University of York and now works at the UK's National Centre for Atmospheric Science (NCAS).

Their PhD focused on developing the GEOS-Chem model to explore concentrations and the effects of atmospheric halogens in the preindustrial & present day. Their work focuses on numerical modelling, both at global/regional scales and using novel machine-learning techniques, to explore science questions from Criegee intermediates to sulfur cycles to sea-surface concentrations. ●

## Codes of Conduct in the Scientific Community

**R**ECENTLY, THERE HAS BEEN A NEEDED PUSH to develop a more welcoming and inclusive scientific community. One method of trying to ensure an inclusive and welcoming work environment are codes of conduct. Codes of conduct outline acceptable behaviors for a group of participants during work and community activities. The aim of these codes of conduct is to provide clear instructions for appropriate behavior during work, work-related, and community activities, define behaviors that won't be tolerated, outline channels for reporting inappropriate behavior, and define consequences for inappropriate behavior. These codes of conduct make community members aware of their own behavior by articulating behavior expectations. By articulating clear behavior expectations, codes of conduct also remove the burden of articulating what behaviors are not acceptable, welcoming, or professional from those experiencing inappropriate behavior.

Codes of conduct have been written for several work contexts pertinent to scientists. These work contexts include field missions, meetings (online and in-person), classrooms, and general codes of conduct for all communications. Examples of codes of conduct are linked at the end of this article, and will be collected on the IGAC website. Many organizations frame the code of conduct around the vision statement or core values of the organization. In this way, organizations seek to ensure that the behavior of those participating in their community is conducive to the goals and vision of the organization.

Each code of conduct is different; however, each has general common themes that will vary in details from organization and context. These themes include:

1. A definition of when the code of conduct applies
2. A definition to whom the code of conduct applies
3. A description of encouraged and appropriate behaviors (e.g., open and welcoming, active listening, inclusive language)

4. A description of behaviors that will not be tolerated (e.g., discriminatory and derogatory language, sexual harassment, violence, unsafe behaviors)
5. How to report violations of a code of conduct
6. Consequences of code of conduct violations

Codes of conduct defined in this article are describing productive and inclusive behaviors in interpersonal relationships between members of a scientific community, team, workplace, or organization. Ethical codes of conduct for scientific research are a separate, but equally important, matter not covered here.

IGAC has not written its own code of conduct; however, we wish to provide examples of codes of conduct for various contexts as a resource for our community. If you know of any codes of conduct you find particularly helpful, please email [info@igacproject.org](mailto:info@igacproject.org) for inclusion. We are particularly interested in more non-English codes of conduct! We will be collecting these codes of conduct for reference on the IGACProject website, [igacproject.org](http://igacproject.org).

## Examples of Codes of Conduct

*Guidelines for writing a code of conduct*

[https://projectinclude.org/writing\\_cocs](https://projectinclude.org/writing_cocs)

<https://www.indeed.com/hire/c/info/write-a-code-of-conduct>

### AdvanceGEO

[https://serc.carleton.edu/advancegeo/resources/codes\\_of\\_conduct.html](https://serc.carleton.edu/advancegeo/resources/codes_of_conduct.html)

*(a number of links to different codes of conduct)*

### Association of Polar Early Career Scientists

<https://www.apecs.is/diversity-equity-inclusion/field-code-of-conduct.html#:~:text=A%20Code%20of%20Conduct%20for,by%20all%20field%20research%20participants.&text=Iden%20tification%20and%20definition%20of%20appropriate%20and%20inappropriate%20behaviour>

Safety and Belonging in the field: a checklist for educators

<https://eartharxiv.org/repository/view/2607/>

### Royal Society of Chemistry

<https://www.rsc.org/globalassets/03-membership-community/join-us/membership-regulations/rsc-code-of-conduct-final.pdf>

### University of Texas Institute of Geoscience

[https://www.ig.utexas.edu/about/mission-science/?fbclid=IwAR2hm-PZJn40EGNfaHora99QseDDdC0pGuyzU2rvz1IEu\\_fTocU5VEzZ-oE](https://www.ig.utexas.edu/about/mission-science/?fbclid=IwAR2hm-PZJn40EGNfaHora99QseDDdC0pGuyzU2rvz1IEu_fTocU5VEzZ-oE) and

<https://ig.utexas.edu/files/2021/11/UTIG-Code-of-Conduct-2021.pdf>

### Pink Sky Lab

[https://github.com/pinskylab/how\\_we\\_work/blob/master/working\\_agreement.md?fbclid=IwAR3X8TEU4peQO1xxJyvwZzmp6aLl4qUbyxyHC28W8VKzafNzbibP3t6wiSo](https://github.com/pinskylab/how_we_work/blob/master/working_agreement.md?fbclid=IwAR3X8TEU4peQO1xxJyvwZzmp6aLl4qUbyxyHC28W8VKzafNzbibP3t6wiSo)

### CNRS (*In French*)

<https://www.cnrs.fr/sites/default/files/pdf/Charte%20de%20d%C3%A9ontologie.pdf>

AGU Policy on Scientific Integrity and Professional Ethics (*includes a section for attendance at AGU Meetings*)

<https://www.agu.org/Learn-About-AGU/About-AGU/Ethics>

University of Washington Marine Conservation and Ecology Group  
<https://sites.uw.edu/essing/code-of-conduct/>

### AMS Code of Conduct

<https://www.ametsoc.org/index.cfm/ams/about-ams/ams-organization-and-administration/ams-code-of-conduct/>

### National Academy of Sciences

<http://www.nasonline.org/about-nas/code-of-conduct/nas-code-of-conduct.pdf>

### EGU Code of Conduct

<https://www.egu.eu/about/code-of-conduct/>

NSF provides the following list of Codes of Conduct for facilities and research sites (including ship-based measurements):

[https://www.nsf.gov/od/oecr/promising\\_practices/standards\\_of\\_behavior.jsp](https://www.nsf.gov/od/oecr/promising_practices/standards_of_behavior.jsp)

UCAR/NCAR Participant Code of Conduct, for participants in conferences, workshops, and field projects:

<https://www.ucar.edu/who-we-are/ethics-integrity/codes-conduct/participants>

### Scientific Committee on Antarctic Research

<https://www.scar.org/scar-library/search/policy/codes-of-conduct/3407-code-of-conduct-terrestrial-scientific-field-research-in-antarctica/file/>

Center for Scientific Collaboration and Community Engagement (CSCCE) Community Participation Guidelines

<https://www.cscce.org/cscce-community-participation-guidelines/>

### Mozilla Community Participation Guidelines

<https://www.mozilla.org/en-US/about/governance/policies/participation/>

PLOS Computational Biology: 10 Simple Rules for Building an Anti-Racist Lab

<https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1008210>

### PyCon US Code of Conduct

<https://us.pycon.org/2021/about/code-of-conduct/>

## Resources to help you develop your own code of conduct

Otter Tech's Code of Conduct Training Workshop

<https://otter.technology/code-of-conduct-training/>

Center for Scientific Collaboration and Community Engagement (CSCCE)

<https://www.cscce.org/>

*At times can be hired to facilitate code of conduct development* 



We are delighted to host the iCACGP-IGAC Joint International Atmospheric Chemistry Conference in Manchester in 2022 and virtually globally. This is the leading global atmospheric chemistry conference. It is run quadrennially, alongside the biannual IGAC Conferences and attracts approximately 600 international scientists, industry leaders, and early career researchers from around the world and includes many leading funding agencies.

As we emerge from the Covid-19 pandemic and the restrictions on international interactions that has placed on all of us we are delighted to be able to plan a conference that welcomes scientists from across the globe to Manchester. We are also keen to learn from our experiences of remote working to seek to make the conference as accessible as possible to a wide audience, including virtual participation options.

The Scientific Steering Committee is developing an exciting programme that spans air pollution to global change and links fundamental research to policy development, interfacing atmospheric science with wider biogeochemistry of the Earth System. The conference follows the strong tradition of previous conferences, not only highlighting cutting edge scientific research in atmospheric chemistry, but also fostering international collaborations, and highlighting scientists and their research from developing and emerging regions. As in previous years, the Science Conference encourages early career scientists and makes every effort to showcase their science. We have an exciting early career programme to develop the next generation of leaders in our field and also to foster their interaction within and across our community.

We are delighted to welcome you to Manchester, the birthplace of the Industrial Revolution, and now a vibrant, multi-cultural modern city with easy access to some of the best countryside in the UK. The atmospheric chemistry community from across our region welcomes you to the UK.

We greatly looking forward to seeing you in Manchester in September 2022 and hope that we can use this as a great opportunity to help rebuild and grow our vibrant community.



## iCACGP-IGAC Joint International Atmospheric Chemistry Conference

### Abstract Submissions are Open!

**T**he iCACGP-IGAC 2022 Conference Committee is excited to announce that abstract submission is open for the hybrid conference to be held September 10-15 in Manchester, UK and virtually globally.

**Abstracts can be submitted here.** The scientific program is outlined **here** and the conference fee structure is **here**. Abstract submissions will be **open until May 31**. Final decisions will be made by July for oral presentations.

We look forward to receiving your abstracts and seeing you in-person or virtually in September!!

### Scientific Program

**Scientific Program Committee** Co-Chairs

Lucy Carpenter and Judith Hoeszmann

#### 1. Fundamentals

Chairs: Christian George and Parisa Aryia

Understanding atmospheric physicochemical processes is pivotal for a quantitative description of its past, current and future composition. This is why this session is inviting curiosity oriented and fundamental contributions that will provide a better understanding of key atmospheric processes from aerosol optics, gas-phase, multiphase and heterogeneous kinetics, new aerosol formation and transformations, novel analytical approaches, to theoretical and numerical approaches. Contributions on emerging contaminants and environmental issues are also welcome.

#### 2. Integrated Observations, Modeling, and Analysis

Chairs: Robyn Schofield and Meehye Lee

Analyzing and interpreting simulations and data from various platforms across multiple spatial and time scales can identify critical issues and underpin predictions of future changes in the atmospheric environment. This session aims to facilitate discussion and integration of major findings from multidisciplinary approaches in atmospheric chemistry research, which will promote scientific understanding and support decision making. We welcome contributions detailing the numerical analysis of data from observations and models, model evaluation against observations, application of such data for prediction,

data assimilation, and machine learning through high performance computing. All types of observation are in scope, from surface to the upper atmosphere, and we also welcome studies of new methodological development in measurement and theory including physical, chemical, and statistical models.

### 3. Air Quality and Impacts

Chairs: Abdus Salam and Nestor Rojas

This session highlights the state of air quality around the globe, the sources of pollutant emissions affecting air quality, and their impacts on health and the environment. This includes: studies on air quality in urban and rural areas and in microenvironments; the strength and toxicity of emission sources, their contribution to concentrations in the atmosphere, and the successes and challenges to reduce emissions; the transport and transformation of air pollutants in the atmosphere; exposure to air pollutants and their impacts on health; and the impacts of air pollutants on the environment and on climate.

### 4. Atmospheric Chemistry at the Interfaces

Chairs: Mei Zheng and Markus Ammann

Interfaces separate environmental compartments at the larger scale and represent transfer points for important biogeochemical and atmospheric cycles. Interfaces also separate liquid, solid and gas phase entities at the molecular level and are implicated in nucleation processes, phase transfer, multiphase chemistry and photochemistry. They affect the climate impact of aerosol particles, exchange between oceans and terrestrial ecosystems and the atmosphere and influence cloud properties. This session focuses on laboratory, field and modelling studies highlighting the importance of the small scale interfacial properties and processes for these large scale exchange and cycling processes.

### 5. Future Perspectives and Policy

Chairs: Laura Gallardo and Clare Murphy

This session looks to the future, presenting a mixture of policy, innovation and new technologies. This includes forecasting/modelling of atmospheric chemistry and composition in the years and decades ahead; emerging technologies that will shape the future; and policies and solutions for our future atmosphere. The session also welcomes submissions about new approaches to engaging the public, policy makers and other communities and stakeholders, as well as emerging research topics or geographical areas of special interest.

#### NOTE: COVID-19 Submissions

The COVID-19 crisis provided a unique experiment to

study how the atmosphere responds to emission cuts on a massive scale. Levels of some pollutants declined sharply in urban regions at the start of the lockdown, then returned quickly as fossil fuel use rebounded. Other pollutants such as particulate matter, which is both emitted directly and formed in the atmosphere from chemical reactions, have complex dependencies on emission changes. The COVID-19 crisis provides an unplanned opportunity to study the interdependencies and variables driving pollutant trends, as well as their impact on health, ecosystems and climate, offering valuable insights for air quality management. The crisis has also initiated a reshape of transport and associated infrastructure in many cities, and a change in the economic priorities of some nations; the anticipated future of pollutant emissions may be different now than in the pre-Covid world. The impacts of COVID-19 cut across all of the Session Topics of the IGAC2022 conference, and we welcome CV19-related submissions in all sessions. ●

## Fee Structure

### IN-PERSON REGISTRATION FEES

#### Early Bird (May-July 15, 2022)

Regular	£500
Student	£350

#### Standard (July 15-September 5, 2022)

Regular	£650
Student	£500

**LMIC** (defined by the World Bank as low and lower middle income countries in 2020, see [here](#) for the list)

Regular	£250
Student	£175

#### On site (after September 5, 2022)

Regular	£700
Student	£550

### ONLINE REGISTRATION FEES

#### Early Bird (May-July 15, 2022)

Regular	£230
Student	£160

*Early bird online registrants may transfer to in person attendance at the early bird registration rate up to the end of July 2022*

#### Standard (July 15-September 10, 2022)

Regular	£340
Student	£265

**LMIC** (defined by the World Bank as low and lower middle income countries in 2020, see [here](#) for the list)

Regular	£115
Student	£40

## TOAR-II Data User Workshop

*first circular*

### Dates

- 23 June 2022 12 h CEST to 24 June 15 h CEST 2022 (on-site)
- 12 July 2022 05 - 10 UTC (virtual)
- 13 July 2022 13 - 18 UTC (virtual)

Workshop content will be the same each time, so you need to participate only in one of the three events.

**Venue:** The on-site event will take place at Forschungszentrum Jülich, Germany (see [https://fz-juelich.de/portal/DE/zentrum/kontaktinformationen/\\_node.html](https://fz-juelich.de/portal/DE/zentrum/kontaktinformationen/_node.html)). Virtual events will be conducted with Zoom.

**Target audience:** Scientists who are involved in TOAR-II and want to perform analyses on data from the TOAR database in order to prepare manuscripts for the TOAR Community Special Issue or the Assessment Report.

**Registration:** Registration will open in April. We will then provide you with a more specific agenda for the events.

**Prerequisites:** The meeting will be held in English. You should have some experience with programming in Python. Ideally you should also be familiar with Jupyter notebooks and git, but this is no requirement.

If you plan to attend one of the online events, we expect you to prepare for this meeting in advance by watching the lectures from the on-site meeting, which will be recorded and posted.

**Costs and funding:** There is no registration fee.

For the on-site event, we will provide lunches and coffee breaks. Travel and accommodation must be paid by your home institution. We will sponsor travel costs for up to two people from developing countries and seek additional funding to support more people if necessary. Please contact us soon if you wish to apply for travel support (<mailto:info@toar-data.org>).

**About the workshop:** The TOAR data user workshop shall introduce the TOAR community to the new TOAR database and the tools for accessing and analysing TOAR data. The goal is to enable the TOAR community to perform their analyses for the Community Special Issue papers and start planning the analyses for the assessment report.

The workshop will feature two parts. In the first part we will give information and training on the new database, data extraction and analysis tools. This will be done through a series of lectures with Q&A sessions. The lectures will only be given once during the on-site meeting and we expect participants of the online meetings to prepare themselves by watching the recordings of these lectures.

In the second part of the workshop (the only part of the online events) we will work together with you in a hackathon-like hands-on format to develop some prototype analysis workflows for TOAR. To prepare for this, we would like to ask you to provide us with a description of the data analysis you plan.

Scheduling of the online events has been done to facilitate participation from Asia on 12 July and from the Americas on 13 July.



# Bids Open for Hosting IGAC2024

Bids are solicited to host the 2024 International Global Atmospheric Chemistry Conference. Full bid submissions in pdf format are due by 1 June 2022 to IGAC ([info@igacproject.org](mailto:info@igacproject.org)). Selection of the winning bid is expected to be announced in July 2022. For information on previous and IGAC Science Conferences, visit <https://igacproject.org/conferences>.

## General requirements

- IGAC strives for our conferences to take place across diverse geographical locations. Please refer to the list of prior symposia/conferences to see where they were hosted in past years.
- The preferred date of the conference is September 2024, although other neighboring months (e.g., July - November) will be considered.
- Conference duration is one full week (5 days)
- Conference Agenda
- One plenary session – no simultaneous/parallel sessions.
- Poster sessions throughout the week with all posters on display throughout the entire week (online and/or in poster hall).
- A conference banquet one evening mid-week for participants and accompanying persons.
- One unscheduled afternoon (typically Wednesday afternoon).
- The Local Organizing Committee (LOC) to provide morning and afternoon coffee breaks as well as on-site lunch everyday for all participants.
- Conference should continue the tradition of a strong emphasis on an Early Career Scientists Program.
- Project side meetings, which are to take place outside of the plenary and poster session times, are to be encouraged. This will require additional meeting rooms for use by conference participants.
- IGAC conferences moving forward will need bids that include hybrid conference options. We would like a plan and a cost for streaming services, facilitating online discussions and questions, and online posters.

## Bid submission requirements

A complete Conference Business Plan should be submitted and include the following:

- Designation of a professional conference organizing company (if applicable). Should preferably have prior experience organizing scientific conferences.
- Designations of the Local Organizing Committee (LOC) and its chair. An LOC comprised of more than one institution and a good balance of scientific expertise, career stage, and gender representation is strongly encouraged.
- Venue location and full description to meet the following requirements:

The main conference room must be able to accommodate a sliding scale of people, starting with at least 250 but with options to reasonably expand with evolving global travel situations, with good viewing of speakers and good acoustics, including sound reinforcement as necessary. In the past, IGAC conferences have had over 700 participants, but this may change in a post-COVID and carbon-footprint mindful world.



## Call for participation in the next CATCH Open Science Workshop on 9-13 May 2022

CATCH proudly announces the next science workshop to discuss atmospheric chemistry research, with a focus on natural processes specific to cold regions of the Earth. Please register online at <https://indico.psi.ch/e/CATCH>

The workshop will host invited talks, social interactions, and contributed posters on CATCH related topics with the aim of fostering scientific interactive discussions between researchers on outstanding questions. This workshop addresses researchers at all stages of their careers and will provide ample opportunity for early career scientist to present and discuss their work.

Sessions and topics will include:

- **Linking biogeochemistry to aerosol-cloud interactions in the Southern Ocean and Antarctic** (Marc Mallet & Ruhi Humphries): Present PICCAASO key science questions and plans, engage community members that can contribute.
- **Ocean-ice-snow-atmosphere fluxes** (Markus Frey & Jen Murphy): Presentation of the current approaches to quantify trace gas and aerosol fluxes above ocean, ice and snow surfaces. Discussion of the strategies to overcome limitations/uncertainties in measurement strategies and how to use this flux information within models.
- **Polar halogen chemistry and interlinked processes** (Jennie Thomas & Thorsten Bartels-Rauch): What is the role of snow, including snow on sea ice, compared to sea salt aerosols in activating and sustaining halogen chemistry? What are the main outstanding questions regarding how halogens influence atmospheric aerosols and oxidation capacity?
- **Cryospheric links to aerosol-cloud interactions** (Paul Zieger & Jessie Creamean): What are the sources and abundances of cloud forming aerosols in the polar regions and how do these vary over the seasons? What processes control aerosol emission and transport? What are the current modeling deficiencies?
- **Coupling of ocean-ice-atmosphere processes: from sea-ice biogeochemistry to aerosols and Clouds, SCOR WG #163: Clce2Clouds** (Megan Willis & Nadja Steiner): Present educational sessions on cross-cutting themes that link the sea-ice/ocean/atmosphere system. Present the plans for Clce2Clouds, and first steps from sub-working groups, to the community and engage community participation.

The meeting format will be one topic per day split into 3 oral sessions (2 hours each) covering all time zones including interactive discussions with one hour of posters and/or social time prior to each oral session. We look forward to your participation. 🍷



## IGAC Related Events and Opportunities

To have your IGAC-related event included on an IGAC bulletin or on the IGAC website, please email [info@igacproject.org](mailto:info@igacproject.org) or fill in the form [here](#).

### **Frontiers in Atmospheric Chemistry Seminar Series**

Online seminar series  
Fridays at 1 pm US Eastern Time  
[Speaker list and registration here](#)

### **Chapman Conference on Climate and Health for Africa**

7-10 June 2022  
Washington, D.C. USA  
Abstracts due 2 March 2022  
[For more information, see here](#)

### **European Geophysical Union Conference**

3-8 April 2022  
Hybrid Conference  
[For more information, see here](#)

### **Health Effects Institute Annual Conference**

24-26 April 2022  
Washington, D.C., USA  
[For more information, see here](#)  
Conference Travel Award application [here](#), due 17 February 2022

### **ESA Living Planet Symposium**

23-27 May 2022  
Bonn, Germany  
[For more information, see here](#)

### **Fire and Climate Conference**

23-27 May 2022  
Pasadena, CA  
6-10 June 2022  
Melbourne, Australia  
[For more information, see here](#)

### **Gordon Research Conference on Biogenic Hydrocarbons and the Atmosphere**

12-17 June 2022  
Abstracts due 14 May 2022, apply early  
[For more information, see here](#)

### **44th Scientific Assembly of the Committee on Space Research (COSPAR) and Associated Events**

16 – 24 July 2022  
Athens, Greece  
[For more information, see here](#)

### **International Aerosol Conference**

4-9 September 2022  
Athens, Greece  
[For more information, see here](#)

### **International Exposure Science Meeting**

25-29 September 2022  
Lisbon, Portugal  
[For more information, see here](#) 



## IN MEMORIAM

# Robert Curtis Harriss

**Adapted from a NASA Earth Observer article by Steve Wofsy, Patrick Crill, and Barry Lefer.**

We are deeply saddened to announce the passing of **Dr. Robert “Bob” Curtis Harriss** on December 24, 2021, after a long illness. As an inaugural member of IGAC’s Scientific Steering Committee [1989-1990], Bob played an important role in the establishment of IGAC.

During his long career, he served 13 years as senior scientist at NASA’s Langley Research Center [1978–1990] and science division director for the Earth sciences at NASA Headquarters [1994–1997]. He also served in academia on the faculty at Florida State University (FSU) prior to joining NASA, at the University of New Hampshire (UNH) between his NASA tenures, and at Texas A&M after his NASA career. His most recent work was at the Environmental Defense Fund as a senior scientist in the Natural Gas Project. He mentored many colleagues and students who are active in leadership roles in Earth science around the world.

Bob was an important scientific architect of NASA’s role in contemporary Earth Systems Science. He conceived of and implemented the groundbreaking expeditions [1980–1990] of the Global Tropospheric Experiment (GTE), which was among the first of the multiscale aircraft- and ground-based observation programs for which NASA is famous. Bob initiated and led the Atmospheric Boundary Layer Experiments (ABLE) during the 1980s. ABLE was the first mission series in GTE. It brought together multidisciplinary teams to address fundamental questions about how the biosphere regulates the chemical composition of the atmosphere, at scales from a few square meters to global coverage. ABLE took place at a time when the Amazon forest was largely intact and the economic giants of Asia had not yet arisen—a world that no longer exists. The rigor, breadth, and precocious timing of GTE created benchmark data sets that we use today to assess the rate of environmental change.

In 1994, Bob returned to NASA from New Hampshire to take the helm of the Science Division of the Mission to Planet Earth. He helped unify NASA Earth Science research and analysis programs as NASA developed the ambitious Earth Observing System (EOS). EOS was undergoing major restructuring, and Bob was a key participant on the leadership team addressing these challenges and developing a plan that was supported by the Earth Science community. His efforts included extensive interactions with the scientists of the fledgling EOS program and close coordination with the Space Studies Board of the National Academy of Sciences. Bob’s ability to work across the broad EOS communities was vitally important to its success. His efforts of three decades ago continue to pay dividends with the operation of the major EOS platforms (Terra, Aqua, Aura), all having lasted well beyond their planned lifetimes, and with the legacies of the many other EOS missions.

Many colleagues have written and commented on Bob’s superb mentoring, describing him as respectful and always willing to share ideas and inspiration. Bob clearly had a transformative influence on their careers. Bob was born in Brownsville, TX on January 5, 1941. He lived there until Texas had its historic drought [1949–1957], when the family was forced to leave their ranch and move to another near Lake Okechobee, FL. Bob received a track scholarship to Georgia Tech, but then transferred to Florida State University, which later afforded him his first faculty position. Bob is survived by his wife, Sandra Harriss, and other family members, to whom the IGAC community members send their sincere condolences.



## IGAC International Project Office

University of Colorado,  
CIRES, Boulder, CO USA

### H. Langley DeWitt

IGAC Director

[langley@igacproject.org](mailto:langley@igacproject.org)

## IGAC SSC Members

James Crawford (Co-Chair)  
NASA Langley Research  
Center, USA

[james.h.crawford@nasa.gov](mailto:james.h.crawford@nasa.gov)

Clare Murphy (Co-Chair)  
University of Wollongong,  
Australia

[clarem@uow.edu.au](mailto:clarem@uow.edu.au)

Owen Cooper  
CIRES  
University of Colorado at  
Boulder

[owen.r.cooper@noaa.gov](mailto:owen.r.cooper@noaa.gov)

Laura E. Dawidowski  
Comisión Nacional de  
Energía Atómica (CNEA),  
Argentina

[dawidows@cnea.gov.ar](mailto:dawidows@cnea.gov.ar)

Lisa Emberson  
University of York, UK  
[l.emberson@york.ac.uk](mailto:l.emberson@york.ac.uk)  
Louisa Emmons  
NCAR, USA

[emmons@ucar.edu](mailto:emmons@ucar.edu)

Rebecca Garland  
University of Pretoria  
South Africa  
[rebecca.garland@up.ac.za](mailto:rebecca.garland@up.ac.za)

Christian George  
CNRS, France  
[christian.george@ircelyon.univ-lyon1.fr](mailto:christian.george@ircelyon.univ-lyon1.fr)

Yugo Kanaya  
Japan Agency for Marine-  
Earth Science and  
Technology (JAMSTEC)  
[yugo@jamstec.go.jp](mailto:yugo@jamstec.go.jp)

Astrid Kiendler-Scharr  
Forschungszentrum Jülich  
IEK-8, Germany  
[a.kiendler-scharr@fz-juelich.de](mailto:a.kiendler-scharr@fz-juelich.de)

Pieterneel Levalt  
NCAR ACOM, USA  
[levelt@ucar.edu](mailto:levelt@ucar.edu)

Aderiana Mbandi  
South Eastern Kenya  
University; UNEP; AfriSTEM,  
Kenya  
[aderiana.mbandi@un.org](mailto:aderiana.mbandi@un.org)

Kerri Pratt  
University of Michigan, USA  
[prattka@umich.edu](mailto:prattka@umich.edu)

Néstor Y. Rojas  
Universidad Nacional  
de Colombia at Bogota,  
Colombia  
[nyrojasr@unal.edu.co](mailto:nyrojasr@unal.edu.co)

Abdus Salam  
University of Dhaka,  
Bangladesh  
[asalam@gmail.com](mailto:asalam@gmail.com)

Vinayak Sinha  
Indian Institute of Science  
Education and Research,  
India  
[vsinha@iisermohali.ac.in](mailto:vsinha@iisermohali.ac.in)

R Subramanian  
Qatar Environment and  
Energy Research Institute  
Qatar  
[suramachandran@hbku.edu.qa](mailto:suramachandran@hbku.edu.qa)

N'datchoh Evelyne Touré  
Université Félix Houphouët-  
Boigny  
Côte d'Ivoire  
[evetchoh@gmail.com](mailto:evetchoh@gmail.com)

Liya E. Yu  
National University of  
Singapore, Singapore  
[liya.yu@nus.edu.sg](mailto:liya.yu@nus.edu.sg)

Mei Zheng  
Peking University, China  
[mzheng@pku.edu.cn](mailto:mzheng@pku.edu.cn)

**Events**  
monthly in  
IGAC eBulletins  
and on  
[igacproject.org](http://igacproject.org)

## Join the IGAC Community

Don't forget to join the IGAC community to stay apprised of the most current news on conferences, workshops, and publications, as well as receive IGACnews by email.

**IGAC mailing list sign up form**

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