

2013-2014 Annual Report
NSF Grant AGS 1208862
NASA Grant NNX12AL56G
NOAA Grant NA10OAR4320142

Reporting Period: July 2013 - June 2014



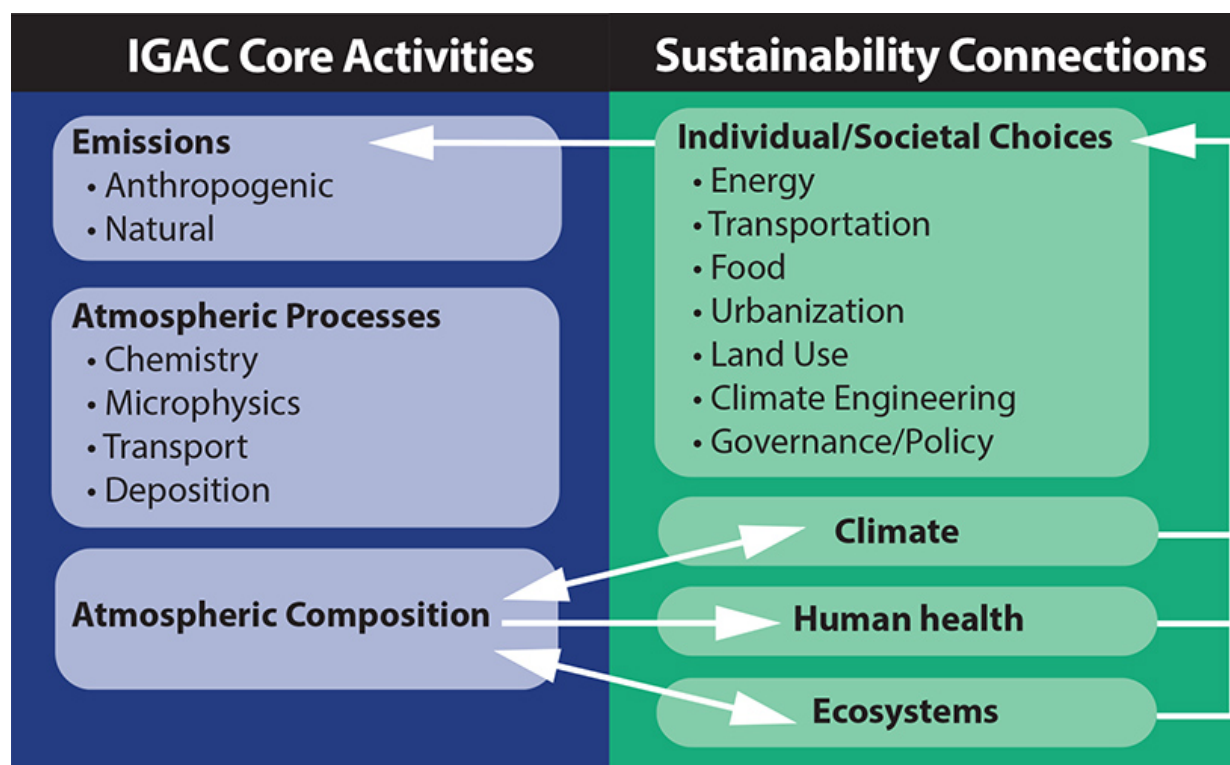
**International Global Atmospheric Chemistry (IGAC) Project
International Program Office (IPO)**

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Accomplishments

1. Project Goals

The International Global Atmospheric Chemistry (IGAC) Project was formed in 1990 to address growing international concern over rapid changes observed in Earth's atmosphere. IGAC operates under the umbrella of the International Geosphere Biosphere Programme (IGBP) and is jointly sponsored by the international Commission on Atmospheric Chemistry and Global Pollution (iCACGP). IGAC's mission is to ***coordinate and foster atmospheric chemistry research towards a sustainable world***, which is achieved by integrating, synthesizing, guiding, and adding value to research undertaken by individual scientists through initiating new activities, acting as a hub of communication for the international atmospheric chemistry research community, and through building scientific capacity. IGAC promotes international collaborations and co-design of scientific knowledge required for responding effectively to the challenges and opportunities of global environmental change and sustainability by enhancing the connection between strong laboratory, field and modeling studies on emissions, atmospheric process and atmospheric composition to the larger Earth system research community.



IGAC's priorities and activities are guided and, in many cases, implemented by an international volunteer Scientific Steering Committee (SSC). It is then the IGAC International Project Office's (IPO) responsibility to implement these priorities by working with SSC members and other members of the international atmospheric chemistry

community to facilitate and foster their execution. This annual report describes the accomplishments of IGAC and the IGAC IPO from July 2013 - June 2014.

2. Scientific Activities

An important role for IGAC is to identify areas in fundamental and sustainability research that require synthesis and integration of research across disciplines and/or geographical boundaries and to facilitate their implantation. Members of the IGAC SSC or members of the IGAC community are invited to identify areas in atmospheric chemistry that are in need of such an organizational framework to help address high-priority “big-picture” questions in atmospheric chemistry. IGAC Activities provide the international organization that is necessary to conduct atmospheric chemistry research towards a sustainable world. Following is a list of IGAC Activities that were active during the reporting period.

Atmospheric Composition and the Asian Summer Monsoon (ACAM)

Jointly Sponsored by WCRP-SPARC

Co-Chairs: Laura Pan, National Center for Atmospheric Research, USA
Jim Crawford, NASA Langley Research Center, USA

ACAM is an emerging IGAC/SPARC activity that will be developed more fully over the next two years. Scientifically, the initiative focuses on four themes, each representing a key aspect of the connection between atmospheric composition and Asian monsoon dynamics: (1) Emissions and air quality; (2) Aerosols and clouds; (3) Convection and chemistry; (4)



UTLS Response to the Asian Monsoon.

Atmospheric Chemistry & Climate Model Intercomparison Project (ACCMIP)

Co-Chairs: Drew Shindell, NASA GISS, New York, NY, USA
Jean-Francois Lamarque, NCAR, Boulder, CO, USA

ACCMIP is providing extensive coordinated model simulations, diagnostics, and evaluations of the effect of short-lived species on climate, in coordination with the climate model intercomparison effort (CMIP). The main focus is on the role of tropospheric ozone and aerosols, which both have substantial climate forcing that varies widely in space and time.

Visit <http://www.giss.nasa.gov/projects/accmip> for more information.



Atmospheric Chemistry & Health (AC&H)

Co-Chairs: Candice Lung, Academia Sinica, Taipei, Taiwan
Christine Wiedinmyer, NCAR, ACD, Boulder, CO, USA

Despite many shared issues, the atmospheric chemistry and health communities have developed research programs that, for the most part, do not explicitly acknowledge or relate to one another, and, as a result, even basic knowledge is not always widely shared. This initiative brings together these two communities to explore the various and multi-dimensional interactions between atmospheric chemistry and human health, with IGAC leading the atmospheric chemistry research needs.



Air Pollution & Climate: A Science-Policy Dialogue

Jointly Sponsored by IGBP

Co-Chairs: Kathy Law, LATMOS/IPSL, Paris, France

Paul Monks, University of Leicester, UK

As part of its second phase synthesis activities, the IGBP identified several key areas which cut across research in its own core projects and which also reach out beyond IGBP with the aim of exploring future cross disciplinary research needs. The IGBP Air Pollution & Climate initiative, led by IGAC, seeks to open a science-policy dialogue on the air pollution and climate change challenge. There is still a separation between air pollution and climate change in both the policy and scientific communities. As with many issues, there also exists a divide between the scientific and policy communities that hinders communication and understanding. This activity will come to a close in 2014 upon the publication of a Strategic Framework for Integrated Programs on Air Pollution and Climate Change.



Chemistry-Climate Model Initiative (CCMI)

Jointly sponsored by WCRP-SPARC.

Co-Chairs: Veronika Eyring, DLR, Cologne, Germany

Jean-Francois Lamarque, NCAR, ACD, Boulder, CO, USA

Michaela Hegglin, University of Redding, UK

CCMI is coordinating model evaluation and associated modeling activities between the domains of chemistry and climate dynamics. To best reflect current understanding, CCMI seeks to frame scientific inquiry in this arena through an integrated stratosphere-troposphere approach. These efforts are meant to culminate in increasingly accurate global atmospheric models to be used in the WMO/UNEP Scientific Assessment of Ozone Depletion and the IPCC Sixth Assessment Report (IPCC AR6). Visit <http://www.met.reading.ac.uk/ccmi/> for more information.



Deposition of Biogeochemically Important Trace Species (DEBITS)

Jointly sponsored by WMO

Chair: Kobus Pienaar, North-West University, South Africa

Wet and dry deposition of chemical species to the Earth's surface plays an essential role in controlling the concentration of gases and aerosols in the troposphere. The chemical composition of atmospheric deposition provides important information on many interacting physical and chemical mechanisms in the atmosphere such as emission sources, atmospheric dynamics and transport, atmospheric removal processes, and nutrient cycling in ecosystems. Long-term research on deposition thus provides critical information on natural and anthropogenic influences on the atmosphere and provides information on the temporal and spatial evolution of atmospheric chemistry.

Fundamentals of Atmospheric Chemistry

Chair: Jon Abbatt, University of Toronto, Toronto, Canada

Fundamental atmospheric chemistry research provides essential data used in all practical (laboratory, field measurements, remote sensing) and theoretical (climate modeling, pollution modeling, cloud microphysics) aspects of scientific endeavor. These studies encompass a diverse range of areas including gas-phase kinetics, heterogeneous chemistry, chamber studies, photochemistry, spectroscopic and thermodynamic chemical data, and meteorology that together, with the attendant measurement techniques, deliver the data and the constant evolution required to work in the atmospherically relevant physical and chemical regimes. The evolution of atmospheric chemistry research has resulted in more emphasis on field research and modeling than on fundamental research typically done in the laboratory. To demonstrate the importance of fundamental research, IGAC integrates



Fundamental Atmospheric Chemistry into all of its activities and includes a session on fundamentals as its biennial conference.

Global Emissions Initiative (GEIA)

Jointly sponsored by iLEAPS, AIMES

Co-Chairs: Greg Frost, CU/CIRES and NOAA/ESRL/CSD, USA

Leonor Tarrason, NILU, Norway

Quantification of chemical emissions into the air is a key step in explaining observed variability and trends in atmospheric composition and in attributing these observed changes to their causes on local to global scales. Accurate emissions data are necessary to identify feasible controls that reduce adverse impacts associated with air quality and climate, to track the success of implemented policies, and to estimate future impacts. GEIA is a community effort that builds bridges between environmental science and policy, by bringing together people, data, and tools to create and communicate the highest quality information about emissions. GEIA seeks to enhance access to emissions data, facilitate



analysis to improve the scientific basis for emissions information, and strengthen the emissions community.

Halogens in the Troposphere (HitT)

Jointly sponsored by SOLAS

Co-Chair: Roland von Glasow, University of East Anglia, UK

The primary objective of HitT is to determine and quantify the importance of reactive halogen compounds (RHCs) in tropospheric chemistry and climate forcing. Key themes are the influence of RHCs on the oxidative capacity of the atmosphere, the ozone budget, as well as in aerosol nucleation and growth. The goal of HitT is to facilitate international collaboration between laboratory, field, and model activities regarding tropospheric



halogen chemistry especially in the following domains: polar regions, salt lakes, marine boundary layer (both remote and coastal), volcanoes, free troposphere, and urban areas.

Interdisciplinary Biomass Burning Initiative (IBBI)

Jointly sponsored by iLEAPS and WMO

Co-Chairs: Johannes Kaiser, ECMWF, Reading, UK
Melita Keywood, CSIRO, Melbourne, Australia

Biomass burning changes the land surface drastically and leads to the release of large amounts of trace gases and aerosol particles that play important roles in atmospheric chemistry and climate. In addition, there is large uncertainty on how climate change and global change will impact the frequency, intensity, duration, and location of biomass burning in the short- and long-term making their emissions a large source of uncertainty of future atmospheric composition. Therefore biomass burning and its emissions need to be observed and modeled accurately for understanding the composition of the atmosphere



and how it changes at different temporal and spatial scales. Significant gaps remain in our understanding of the contribution of deforestation and savanna, forest, agricultural waste, and peat fires to emissions. IBBI will help better quantify the present and future impact of biomass burning emissions on the composition and chemistry of the Earth's atmosphere.

Ocean-Atmosphere-Sea Ice-Snowpack (OASIS)

Jointly Sponsored by SOLAS

So-chairs: Faye McNeill, Colombia University, New York, NY USA

Tom Douglas, U.S. Army CRREL, Fairbanks, AK, USA

The Ocean – Atmosphere – Sea Ice – Snowpack (OASIS) brings together an international group of multidisciplinary field researchers, laboratory scientists, and modelers to study chemical and physical interactions and exchange processes between the title reservoirs, with a primary focus on the impact on tropospheric chemistry and climate feedbacks. A sub-activity of OASIS is Air-Ice Chemical Interaction (AICI). AICI assesses the significance of processes in the polar regions at the air-ice interface at local, regional, and global scales by bringing together the laboratory, field, and modeling communities.



Polar Study using Aircraft, Remote Sensing, Surface Measurements, and Models of Climate Chemistry, Aerosols, and Transport (POLARCAT)

Co-Chairs: Andreas Stohl, NILU, Kjeller, Norway

Kathy Law, LATMOS/IPSL, Paris, France

POLARCAT addresses important gaps in knowledge of the climatically sensitive polar-regions, i.e., how they respond to a complex summation of surface exchange processes, vertical transport, unique Arctic air chemistry, and import from and export to mid-latitude regions. The activity incorporates intensive aircraft experiments, research ship cruises, monitoring activities at surface stations, ground-based remote sensing, balloon releases, satellite measurements, and a range of different models to test the understanding of Arctic processes against the measurement data sets. The task's efforts have led to a special issue in Atmospheric Chemistry and Physics.

Tropospheric Ozone Assessment Report (TOAR): Global metrics for climate change, human health and crop/ecosystem research

Chair: Owen Cooper, NOAA/ERSL, CU/CIRES, Boulder, CO USA

Tropospheric ozone is a greenhouse gas and pollutant detrimental to human and vegetation health. Since 1990 the anthropogenic emissions that react in the atmosphere to produce ozone have shifted from North America and Europe to Asia. This rapid shift, coupled with limited ozone monitoring in developing nations, has left scientists unable to answer the most basic questions: Which regions of the world have the greatest human and plant exposure to ozone pollution? Is ozone continuing to decline in nations with strong emission controls? To what extent is ozone increasing in the developing world?

3. IGAC National/Regional Working Groups

There are many regions of the world where there are many great scientists but often their research is conducted very independently and their results often don't reach the international community. However, as atmospheric chemistry research questions and their connections to societal issues become more regional, there is a strong desire to engage



these scientists in order to incorporate their research and local knowledge of these regions of the world. Therefore, the goal of IGAC National/Regional Working groups is two fold; one is to create a strong cohesive community of atmospheric scientists in a specific nation/region that together have a sum greater than its parts, and the second is to connect the regional/national working groups to the larger IGAC community in order to foster international collaboration. IGAC currently is sponsoring the following working groups:

IGAC China Working Group

Chair: Tong Zhu, Peking University China

The sheer magnitude of China's landmass coupled with its growing and economically advancing population makes it critical to understand its role in air quality and climate on both regional and global scales. Chinese atmospheric chemists have been conducting frontier research for forty years in areas such as urban and regional air pollution and the climate effects and health impacts of air pollution. IGAC, through multilateral sponsorship, intends to more fully integrate Chinese research experience through its first national working group in China. The goals of the IGAC China Working Group are to:

- Encourage participation of Chinese atmospheric scientists to engage their leadership in international, multilateral atmospheric chemistry research programs;
- Strengthen ties with IGAC to facilitate the implementation of IGAC related research projects and tasks in China;
- Provide advice or consultation on major research plans in atmospheric chemistry in China to promote funding support;
- Promote academic exchange on atmospheric research in China and internationally, especially with IGBP China Working Groups; and
- Provide a platform in China to facilitate the academic growth and development of young researchers in atmospheric chemistry.

IGAC Americas Working Group

Co-Chairs: Nestor Rojas, Universidad Nacional de Colombia, Colombia
Laura Dawidowski, CNEA, Argentina

Under the guiding principle of providing equal opportunity for all scientists in the Americas, the IGAC Americas Working Group aims to build a cohesive network and foster the next generation of atmospheric scientists with the ultimate goal of contributing to development of a scientific community focused on building collective knowledge in/for the Americas. There is a priority on bringing together scientists from across the entirety of the Americas. To this end, the Americas Working Group seeks to:

- Improve the collaboration and communication between scientists in Latin America;
- Connect the Latin America community to the international community;
- Train and foster the next generation of scientists;
- Influence and promote a more proportionate distribution of funds for research
- Enhance visibility and credibility of scientists in Latin America

IGAC India Working Group

Co-Chairs: Sachin S. Gunthe, Indian Institute of Technology Madras
Ramya S. Raman, Indian Institute of Science Education and Research Bhopal

India has been involved in atmospheric chemistry research for over two decades, with atmospheric scientists conducting pioneering research in the field of atmospheric chemistry. The scale of the scientific output from India, however, is highly contradictory to the country's global relevance in atmospheric chemistry, a relevance accelerated by increasing emissions from rapid industrialization and urbanization. The vast geographical extent of India, its growing and economically advancing population, and the role of distinct and cyclic seasons makes it "imperative and precarious" that we make efforts in combining these issues to better understand their role in air quality and climate at a regional scale. Further, we must initiate conclusive efforts in the right direction, a current caveat due to isolated efforts of the scientific community in India. The goal of the India Working Group is to bring the Indian atmospheric chemistry community together to enhance scientific coordination and output from India, while simultaneously improving the scientific understanding of this region of the world at an international level.

Japan National Committee

Chair: Hiroshi Tanimoto, National Institute for Environmental Studies, Japan



Under the Science Council of Japan, the IGAC-Japan National Committee has goals to:

- Encourage participation of Japanese atmospheric scientists to engage their leadership in international atmospheric chemistry research programs;
- Strengthen ties with IGAC to facilitate the implementation of IGAC related research projects by Japan;

- Provide advice or consultation on major research plans in atmospheric chemistry by Japan to promote funding support;
- Promote academic exchange on atmospheric research by Japan and internationally, especially with other IGBP-Japan or WCRP-Japan Committees; and
- Provide a platform in Japan to facilitate the academic growth and development of young researchers in atmospheric chemistry.

4. Opportunities for Training and Profession Development

IGAC has financial sponsored or endorsed the following workshops in 2013-2014

- **Health, Agriculture, and Water Risks Associated with Air Quality and Climate in Asia, 9-12 July 2013, Boulder, CO, USA (IGAC Endorsed)**
About 55 scientists from Asia, Europe, and the United States participated in the workshop. Talks on various tools including climate modeling at different scales, emissions, chemical weather forecasting, satellite observations, and adjoint modeling. Presentations on cross-disciplinary activities highlighted air quality and health, urbanization, government policies, and co-benefits of improving air quality and reducing effects on future climate by reducing pollutant emissions. Two breakout sessions were held that discussed needed data or tools to further scientific understanding of the cross-disciplinary activities and important scientific questions addressed by cross-disciplinary projects.
- **IGAC SSC Meeting, 30 September – 4 October 2013, Kruger Park, South Africa (IGAC Sponsored)**
The 28th Annual Meeting of the IGAC Scientific Steering Committee (SSC), hosted by SSC member Kobus Piennar, focused on synthesizing the achievements of IGAC to date in anticipation of IGBP ending in 2015, and developing IGAC's role as a central project in the new Future Earth initiative that will replace IGBP. The IGAC SSC also reviewed current, emerging and proposed activities during the meeting. There is a great deal of current activity in IGAC with new initiatives in biomass burning, atmospheric chemistry and health, chemistry-climate modeling and a major effort to recognize the importance of fundamentals of atmospheric chemistry nationally and internationally (see Abbatt et al, *Atmospheric Environment*, 84, 390-391, 2014). Another major topic of discussion at the IGAC SSC meeting was the upcoming joint iCACGP and IGAC symposium/conference to be held in Natal, Brazil in September 2014. The program outline was presented by IGAC SSC member and Scientific Program Committee co-chair Yinon Rudich.
- **Capacity Building Workshop on Modeling of Regional Climate and Air Quality for West Africa, 7-11 October 2013, Abidjan, Cote d'Ivoire (IGAC Sponsored)**
Overall, about 40 participants attended the workshop, which was divided into theoretical lectures in the mornings and computer lab sessions in the afternoons. Most of the participants were students and researchers from Africa with diverse scientific backgrounds and interests in the fields of climate, hydrology, air quality, and oceanography. Topics presented in morning lectures consisted of (i) the West

African climate system, its variability and possible future climate change and (ii) atmospheric chemistry processes (gas and aerosols from natural and anthropogenic sources) and their relation with the West African regional climate.

- **IGBP/ IGAC Air Pollution & Climate Initiative Workshop, 5-7 November 2013, Boulder, CO, USA (IGAC Sponsored)**

This workshop was the next step in an initiative that most recently released [Time to Act: The Opportunity to Simultaneously Mitigate Air Pollution and Climate Change](#), a brief report urging a collaborative effort across the natural and social sciences to better inform the policy community. Maintaining this interdisciplinary focus, the November workshop was preceded by a Preliminary Report that set the agenda by compiling findings from interviews of over 50 natural and social scientists, policymakers and private sector representatives on the challenges and potentials for integration. With 32 participants representing 15 countries and each of the four natural science, social science, policy, and private sector communities, the aim was to outline the Strategic Framework for Integrated Programs on Air Pollution and Climate Change for release in summer 2014. To this end, workshop participants over the first two days held panel presentations, breakout groups and overarching discussions on themes identified in the Preliminary Report. Panels addressed current organizational efforts on integration, working with national and regional regulatory and institutional systems, improving interactions across the four communities to facilitate integration, and information needs for effective integrated programs.

- **GEIA/IBBI/CCMI Development of a Community Historical Emissions Inventory, 20-21 November 2013, Hamburg, Germany (IGAC Sponsored)**

Thirty-five scientists from Europe, North America, Africa and Asia participated in the workshop. The workshop focused on anthropogenic and biomass burning emissions; natural emissions will be addressed in another workshop. The most recent anthropogenic inventories developed in Europe, the USA, the Middle East, Africa and Asia were discussed, with specific focus on different emission sectors, i.e., transportation, industrial activities, shipping, and agriculture. The possibility of updating emissions to the most recent years using inverse modeling techniques was also discussed. The workshop covered advancements in determining recent biomass burning emissions information from satellite observations, such as active fires, burned areas or fire radiative power. Long-term historical time series of fire emissions simulated by dynamical vegetation models were also considered. Emissions data still have large uncertainties, so the participants suggested developing a reference inventory together with well-documented alternative datasets that could be used for sensitivity studies at both the global scale and in different regions. This approach could provide a measure of the uncertainty on the reference inventory.

- **TF HTAP Modeling Workshop, 5-6 December 2013, San Francisco, CA, USA (IGAC Endorsed)**

More than 50 experts attended the meeting in person with another 30 experts participating in portions of the meeting via web conferencing. The main focus of the workshop was the launch of a new round of cooperative global and regional modeling experiments focused on the 2008-2010 time period. As part of the TFHTAP's 2012-2016 work plan, the new experiments are intended to help improve our understanding of the relative role of regional and extra-regional sources of air pollution in different regions across the Northern Hemisphere.

- **IGAC India Working Group Workshop, 6 April 2014, Bangalore, India (IGAC Sponsored)**

This one-day workshop brought together academics, scientists and researcher in atmospheric sciences from across India to discuss the formation, functioning, responsibilities and administrative aspects of an IGAC India Working Group. The IGAC India working group will aim to provide a platform for promoting interaction amongst atmospheric scientists within the country, as well as between the community of Indian atmospheric scientists and the global IGAC community. Additionally, the working group will explicitly encourage collaborative research, and prepare early career scientists for leadership roles in atmospheric chemistry research at National and International levels. These efforts are expected to bring together scientists working in diverse but related areas to provide overall perspectives and the scientific inputs needed to address the larger problems.

- **IBBI Workshop, 23-15 April 2014m Scholss Ringberg, Gemany (IGAC Sponsored)**

This was the third workshop in a series of workshop for the establishment of IBBI. The workshop addressed the following goals: (1) Identify secondary goals for IBBI; (2) Develop strategies to achieve the goals; (3) Plan a COST action to support IBBI goals; (4) Plan a special issue in Atmospheric Environment for publication on emerging issues in biomass burning research; and (5) Identify members of the IBBI scientific steering committee. IBBI will foster interdisciplinary research on biomass burning in order to improve atmospheric composition and air quality monitoring and forecasting through better scientific understanding of the various process around biomass burning.

- **16th GEIA Conference: Bridging Emissions, Science and Policy, 10-11 June 2014, Boulder, CO (IGAC Sponsored)**

Through provocative presentations and robust discussions, this conference provides a forum for exploring the role of emissions as a crucial link between scientific innovation and societal development. The conference addresses several key questions: (1) How are recent measurement advancements helping to better quantify emissions? (2) What are new developments in emissions process understanding? (3) What are the challenges in interpreting past emission trends and projecting future emissions? and (4) How does improved emissions knowledge inform critical societal issues? GEIA is an international community effort that builds bridges between environmental science and policy by bring together people, data,

and tools to create and communicate the highest quality information about emissions.

5. IGAC Communications/Networking

This covers a myriad of activities including a thrice-yearly newsletter, website, mailing list, social media and miscellaneous networking activities conducted throughout the year.

- **IGAC Newsletter**
IGAC continues to produce a scientific newsletter on a four month basis that is distributed internationally to ~3,000 scientists. While many peer reviewed publications result from IGAC Activities, the primary product resulting directly from this grant is the IGAC digital newsletter. All past issues of the newsletter (now numbering 51 in total) are downloadable from the IGAC web page.
- **IGAC Website (www.igacproject.org)**
The website highlights activities, conferences, workshops and IGAC related events. The website is kept up to date with recent publications, mailing announcements and upcoming events.
- **IGAC Mailing List**
Updates, reminders and information about conferences and activities are emailed to ~3,000 subscribers via MailChimp.
- **Social Media**
IGAC is also found on social media outlets such as Facebook, Twitter and LinkedIn.
- **Visualizations**
IGAC also continuously works with a graphic designer to design logos for its activities as well as communicate science more effectively through diagrams, figures and graphs.

6. Strategic Outlook

Over the next reporting period, IGAC will continue to support its current scientific activities and National/Regional Working Groups. The progress of IGAC's current activities and National/Regional Working Groups will be assessed at the annual IGAC Scientific Steering Committee (SSC) 20-21 September 2014 in Natal, Brazil prior to the biennial IGAC Science Conference. Based on the 2014 IGAC SSC meeting, some activities or working groups may be created, while others come to an end. IGAC will also continue to support workshops that are related to IGAC activities or its vision. IGAC will also continue to grow its communication/networking capabilities to meet the demand from our international community. Finally, as IGBP comes to an end December 2015, IGAC will be transitioning to becoming a core project of Future Earth. IGAC views Future Earth as a genuine opportunity for the international atmospheric chemistry community to enhance its connection between strong laboratory, field and modeling studies on emissions, atmospheric processes and atmospheric composition to the larger Earth system research community. Through Future Earth, IGAC can promote international collaborations and co-design the scientific knowledge required to respond effectively to the challenges and opportunities of global environmental change and sustainability.

Products

- **Publications**

1. [New Directions: GEIA's 2020 vision for better air emissions information](#) (2013) J. Frost, P. Middleton, L. Tarrason, C. Granier, et al. Atmos. Env.
2. [New Directions: Fundamentals of atmospheric chemistry: Keeping a three-legged stool balanced](#) (2014) J. Abbatt, C. George, M. Melamed, P. Monks, S. Pandis, and Y. Rudich. Atmos. Env.
3. [New perspectives on Air-Ice Chemical Interactions \(AICI\) Special Issue](#) (2013) Eds. V. F. McNeill, E. Wolff, T. Bartels-Rausch, and H. Pfeifferberger. Atmos. Chem. Phys.
4. [The Atmospheric Chemistry and Climate Model Intercomparison Project \(ACCMIP\) Special Issue](#) (2013) Eds. M. Dameris, D. Spracklen, and H. Tost. Atmos. Chem. Phys.

- **Websites**

www.igacproject.org

- **Other Products**

IGAC Newsletter, <http://igacproject.org/Newsletters>

Participants

The International Global Atmospheric Chemistry (IGAC) Project's International Project Office (IPO) is located at the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado, Boulder. Three employees have been supported within the IGAC International Project Office from 2013 to 2014. Dr. Megan L. Melamed works 100% time as the IGAC Executive Officer. Ms. Robin Strelow works 15% time as the IGAC Graphic Designer. Jeff Jennings works 20 hours per week as the IGAC Project Officer.

However, there is a much wider participation in the IGAC project than just those whose pay is covered under this grant. The project activities are guided and, in many cases, implemented by an international Scientific Steering Committee (SSC), which acts on a volunteer basis. The current IGAC SSC members as of January 2014 are listed below.

Last Name	First Name	Institution	Country
Goldestein	Allen (Co-chair)	University of California-Berkeley	USA
Monks	Paul (Co-chair)	University of Leicester	UK
Abbatt	Jon	University of Toronto	Canada
Barth	Mary	NCAR	USA
Granier	Claire	LATMOS	France
Heald	Colette	MIT	USA
Hoelzemann	Judith	URFN	Brazil
Keywood	Melita	CSIRO	Australia
Lawrence	Mark G.	IASS	Germany
Lung	Candice	Academia Sinica	Taiwan
Mayol-Bracero	Olga	Univerity of Puerto Rico	USA

Pandis	Spyros	University of Patras	Greece
Park	Rokjin	Seoul National Univeristy	South Korea
Rudich	Yinon	Weizmann Institute	Israel
Sharma	Chhemendra	National Physical Laboratory	India
Tanimoto	Hiroshi	NIES	Japan
Wang	Tao	Hong Kong Polytechnic University	China
Yassa	Nouredine	CDER	Algeria

In addition to SSC members, IGAC relies on the involvement of the entire international atmospheric chemistry community in order to carry out its activities. This is both evident in the leaders of IGAC Scientific Activities and National/Regional Working Groups mentioned in this report as well as the scientists participating in the scientific activities and working group and the attendees IGAC sponsored and endorsed workshops and conferences.

Impacts

The role of the IGAC Project is twofold. Its first responsibility is to coordinate and foster atmospheric chemistry research at an international level. Although IGAC does not conduct research, it does provide an “added value” to atmospheric chemistry research. Examples of this are facilitation of international collaboration for research field campaigns, which means that scientists funded at the national level gain access to resources, knowledge, and coordination thus getting more “bang for their buck” from their research grants, e.g. POLARCAT. IGAC also organizes international efforts to address research needs in specific regions of the world, e.g. IGAC National/Regional Working Groups, or on specific topics in atmospheric chemistry, e.g. the IGAC/SOLAS OASIS Activity. In addition, IGAC coordinates the synthesis, assessment, and summary of research that would otherwise not occur, e.g. The Tropospheric Ozone Assessment Report (TAOR). IGAC, through the Chemistry-Climate Model Initiative (CCMI) is contributing to the WMO/UNEP Ozone Report and the IPCC assessment process. IGAC also has a strong focus on engaging the next generation of young atmospheric scientists by providing travel grants to IGAC cosponsored workshops, meetings, and conferences as well as highlighting their work in the IGAC newsletter. Therefore, from early in their careers, these young scientists join an international network of atmospheric scientists that will further facilitate atmospheric chemistry research at an international level.

IGAC's second responsibility is to act as a liaison between the atmospheric chemistry community and the broader Earth System Research community. As part of the IGBP, IGAC contributes to understanding the current state of knowledge of the Earth System and identifying the most pressing issues in the Earth System. IGAC facilitates integrative research and synthesis efforts that leverage atmospheric chemistry research to address larger Earth System questions, e.g. Global Emissions Initiative (GEIA). In addition, IGAC publishes reports such as the *Strategic Framework on Integrated Programs on Air Pollution and Climate Change* that reach a wider audience and different disciplines than individual papers published in atmospheric chemistry journals. IGAC also works to reach across the

aisle into different disciplines in order to bridge the divide between scientific experts, i.e. the IGAC Atmospheric Chemistry & Health (AC&H) initiative. Through its activities, IGAC provides an invaluable service to the international atmospheric chemistry community, the wider Earth System Research community, and to stakeholders both by advancing atmospheric chemistry research and contributing to understanding the Earth System.