



ICAS Newsletter

Issue 16
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Institute for Climate and Atmospheric Science

SCHOOL OF EARTH & ENVIRONMENT <https://environment.leeds.ac.uk/institute-climate-atmospheric-science>

CONGRATULATIONS: FELLOWS OF AMERICAN GEOPHYSICAL UNION

Professor Piers Forster and Professor Ken Carslaw have been elected as Fellows of the American Geophysical Union (AGU). They received the honours in recognition of their visionary leadership, scientific excellence and exceptional research contributions to their respective fields.

Read more on page 2

Above Photo: View from the air, looking out over George VI Ice Shelf towards Western Palmer Land on the Antarctic Peninsula. Credits: CPOM-A. Hogg To read more about this image go to page 9.

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FELLOWS OF AMERICAN GEOPHYSICAL UNION continued...



The AGU is an international scientific association dedicated to advancing Earth and space science for the benefit of humanity. Its membership numbers tens of thousands, spanning more than a hundred countries. Only 0.1% of AGU membership receives recognition through a Fellowship in any given year.

Ken (left) is a professor in the Institute for Climate and Atmospheric Science. His research improves our understanding of atmospheric aerosol particles and the effects they have on climate. Piers (right) is a professor of climate physics in ICAS and Director of the Priestley International Centre



for Climate. He has played significant roles in authoring Intergovernmental Panel on Climate Change (IPCC) reports, as well as a recent pivotal Net Zero report from the UK Committee on Climate Change.

On the announcement of his Fellowship, Piers said: "It's great to be receiving this honour, and getting it at the same time as Ken is the icing on the cake. The recognition is based mostly on publication record. Nearly all my papers have been collaborative efforts, working with esteemed colleagues from around the world, and with some exceptional -PhD students and postdocs. As such, I owe a huge debt of thanks to these colleagues and friends."

MESSAGE FROM OUR DIRECTOR

Welcome to another issue of the ICAS newsletter. This is published three times per year and gives a brief overview of some recent highlights in ICAS.

At the start of the academic year we welcome new PhD students, researchers and staff to Leeds. Of course, people arrive all year round but the largest single event is the induction of new PhD students at the start of October, which emphasises the cyclical nature of education and training. At the same time we say farewell (or maybe au revoir) to the ever-increasing number of ICAS graduates and alumni taking up positions in the outside world.

At the time of writing we are getting ready for our Annual Science Meeting in Leeds on November 5th. The size of ICAS is brought home to me by the fact that we have 125 people registered to attend – out of a possible 170 or so. That emphasises the size and strength of climate and atmospheric science in Leeds. It will be busy day.

I strongly believe that the success of ICAS is built on the excellent individuals that we have here in Leeds who are provided with an environment in which to do what they are capable of, independently and in a team. This is emphasised when we get the regular news of prizes, awards, highlight publications and so on. It is gratifying that the prizes range from the very senior (AGU Fellowships for Ken and Piers, above) to the very early career (Aerosol Society prize for Amy, page 6).



FEATURED PAPER: BUDGETING FOR OUR FUTURE

CLIMATE

A new framework provides a robust scientific tool for researchers, policymakers and industry to calculate remaining global carbon budgets. This work will help define carbon emission reduction targets more clearly as part of urgent attempts to tackle climate change. The 2015 Paris Agreement set the reduction of greenhouse emissions as a critical step in achieving the goal of limiting the increase in global average temperatures to 1.5–2°C above pre-industrial levels. The estimate of the total amount of CO₂ that can be emitted while still limiting global warming to the required level is referred to as the remaining carbon budget.

Carbon budgets have become a popular tool for guiding climate policy and have been used by scientists as a core component for analysing and estimating potential climate scenarios under different carbon constraints. However, a wide range of estimates for the remaining carbon budget have been reported, which limits its effectiveness for setting emission reduction targets consistent with the Paris Agreement temperature limits. There are a number of factors that can introduce uncertainties into a carbon budget.

An international team of scientists, including ICAS researchers, have produced a new framework for calculating carbon budgets that can help reconcile differences in remaining carbon budget estimates and can provide a basis for narrowing uncertainties in future estimates.

Their study, published in *Nature*, seeks to limit uncertainty by defining the remaining carbon budget by five main factors:

- the amount of warming expected per ton of CO₂ emission;
- the current amount of warming observed;
- the amount of future warming expected from gases and pollutants other than CO₂;
- whether warming stops instantly once CO₂ emissions reach zero;



- an additional correction for whether there are any feedbacks, such as permafrost thawing, that are not routinely considered.

This research, led by the International Institute for Applied Systems Analysis (IIASA) in Austria, proposes that with the application of the framework, changes in the carbon budget can be pinpointed to single contributions.

“This work is about putting the remaining global carbon budget on a solid scientific footing and defining more clearly what the world can emit globally.”

Professor Piers Forster, Director, Priestley International Centre for Climate & Professor of Climate Physics in ICAS.

A simplified version of this framework was already applied in the recent Intergovernmental Panel on Climate Change’s (IPCC) special report: Global Warming of 1.5°C. The study’s co-author, **Professor Piers Forster**, said: “This work is about putting the remaining global carbon budget on a solid scientific footing and defining more clearly what the world can emit globally. There is still work on how to apportion this budget fairly to the citizens of the world to turn this framework’s findings into meaningful targets for nation states, cities or families. Setting evidence-based targets, as the Committee on Climate Change recently did for the UK, is the necessary first step for meaningful action on climate change.”

Study co-author **Dr Chris Smith**, said: “Carbon budget is an increasingly common phrase heard when discussing plans to tackle climate change. But without robust scientific evidence underpinning these numbers, there is the risk that policy could miss the mark when it comes to urgently curbing global warming. Global warming is caused by many substances, alongside CO₂. Methane, nitrous oxide and aerosols also affect global temperatures. This framework aims to capture the full picture of what is contributing to global warming and shed light on the reduction targets that need to be set.”

Study lead author, Joeri Rogelj, a senior researcher with the IIASA Energy Programme, said: “This [research] should increase confidence in carbon budget estimates among policymakers, or at least their advisors, because changes in carbon budget estimates cease to appear to be random but rather are the result of clear progress of science in various areas. The remaining carbon budget is a key quantity for defining the challenge of limiting climate change to safe levels. With this paper, we can understand and track this quantity much better.”

[Joeri Rogelj, Piers M. Forster, Elmar Kriegler, Christopher J. Smith & Roland Séférian. A framework to estimate and track remaining carbon budgets for stringent climate targets, 2019, Nature <https://doi.org/10.1038/s41586-019-1368-z>](https://doi.org/10.1038/s41586-019-1368-z)

OUR NEW INTAKE OF PHD STUDENTS

Student	Project	Supervisor	Funding
Xinyue He	Climate change, water cycle and forest management	Spracklen/Holden/ Zhenzhong Zeng (SUSTECH)	Southern University of Science and Technology (SUSTech, China)
Vania Lopez Garcia	New insights into reactions between the lower atmosphere, cloud, and the surface over the central Arctic ocean	Brooks/Neely	Conacyt
Francesca Morris	The understanding and prediction of high impact weather in the Gulf of Guinea.	Schwendike/Marsham/ Bain (Met Office)	NERC Panorama DTP
Matilda Pimlott	Investigating long-term changes in European air quality in the satellite era	Chipperfield/Pope	NERC Panorama DTP
Yvan Rome	The ice age, oceans and climate triggers of iceberg calving and rapid temperature change	Ivanovic/Gregoire	NERC Panorama DTP
Paloma Trascasa	Modulation of El Niño-Southern Oscillation and its impacts by the mean climate state	Maycock/Forster	NERC Panorama DTP
Anne Braakmann-Folgmann	Ice losses from the antarctic peninsula	Shepherd/Hogg (Computing)	Alumni (Barry Slavin) Alumni & Dev Fund SEE
Stephen Denison	The response of the earth system to net negative emissions	Forster/Gloor (Geography)	United Bank of Carbon
Leon King	Measuring the elusive particles that form ice in clouds	Murray	NERC Panorama DTP
Kathleen Thompson	The size, sources and transport of the seeds of the ice in clouds	Murray	EPSRC Aerosol CDT (EPS/Bristol)

FUTURE LEADER TO DELIVER GLOBAL IMPACT

ICAS staff member **Dr Lauren Gregoire** has received a prestigious fellowship aimed at tackling global challenges. Chris Skidmore, Minister of State for Universities, Science, Research and Innovation, announced that Lauren was among those who have been awarded a Future Leaders Fellowship funded by UK Research and Innovation (UKRI).

One of UKRI's flagship programmes, the scheme provides sustained funding and resources for the best early-career researchers and innovators, allowing them the time and flexibility to tackle ambitious research projects. This includes predicting extreme sea level rise, building inclusive, climate resilient cities, and developing new sensors to understand the chemistry of the changing climate.

Minister Skidmore said: "From Sir Tim Berners-Lee's creation of the World Wide Web, to Rosalind Franklin whose work was critical in understanding DNA, we have a rich history of talented individuals who have paved the way for ground-breaking research and discoveries in their fields. Our investment in these Future Leaders Fellows will enable the brightest and best of our scientists and researchers to work with leading lights in industry, to help their research move from the laboratory to the commercial market.

UK Research and Innovation Chief Executive Professor Sir Mark Walport added: "The Future Leaders Fellowships offer long-term support for the most talented researchers and innovators. Fellows will be encouraged to be adventurous in tackling tough and important research questions and opportunities for innovation. The Fellowships offer opportunities to move across disciplinary boundaries and between academia and industry. These Fellowships will enable us to grow the strong supply of talented individuals needed to ensure that UK research and innovation continues to be world leading."

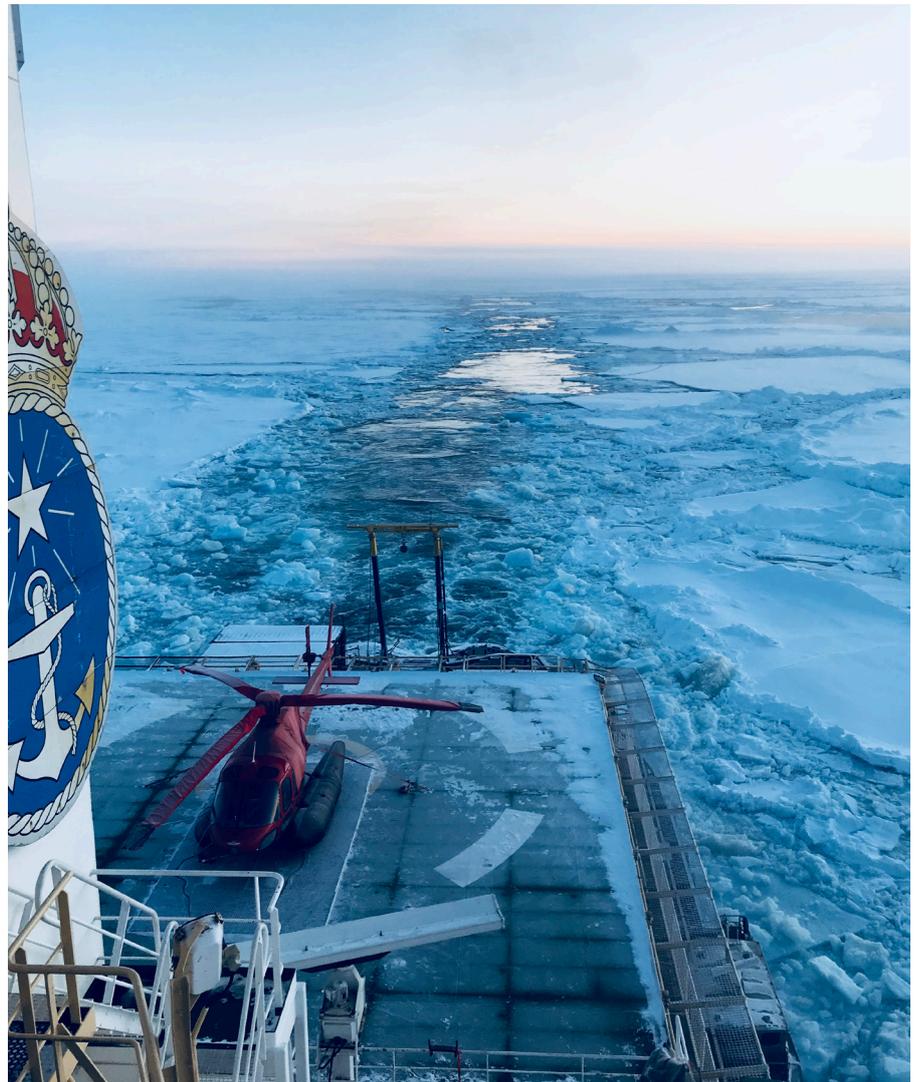
Instabilities in Arctic ice sheets have the potential to cause more than one metre of sea level rise by 2100, threatening coastal regions that are currently home to some 100 million people. Lauren will lead a team of researchers to produce the first robust projection of future ice sheet instability informed by the past, with predictions for "worst case" sea level change. Instabilities in ice sheets can cause runaway ice loss and pose the largest threat of future rapid sea level rise.

Lauren said: "Instabilities in ice sheets can cause runaway ice loss and pose the largest threat of future rapid sea level rise. But predicting potential instability triggers is extremely challenging because the only observations of ice sheet instabilities are from the geological past. In order to reliably translate



our knowledge from the past into confident future projections, we need new statistical methods that can account for climate uncertainties. This will allow us to more confidently predict future change and adequately plan for the possibility of a 'worst case' sea level change."

Photo below: Credit: Michael Adams



SUCCESSES & CONGRATULATIONS



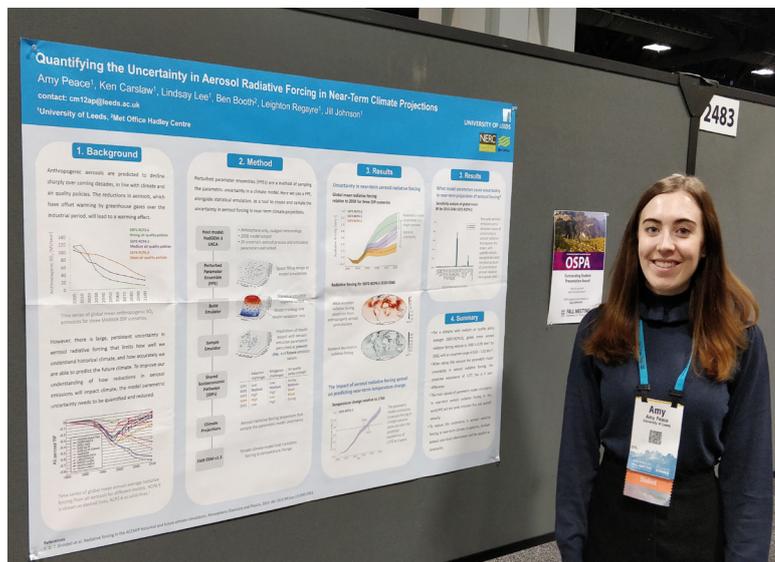
HOT OFF THE PRESS! Congratulations to **Anna Hogg** (CPOM, ICAS) who has been awarded the European Geosciences Union 2020 Division Outstanding Early Career Scientist Award! Winners are honoured for their important contributions to the Earth, planetary and space sciences. Anna will receive her prize at the EGU 2020 General Assembly, which will take place in Vienna on 3–8 May. Our congratulations go to Anna again, on her appointment as University Academic Fellow in Earth Observation of the Cryosphere. See more from Anna on page 9.

See link: <https://www.egu.eu/news/545/egu-announces-2020-awards-and-medals/>

Winner of Hugh Robert Mill Award of the Royal Meteorological Society

Congratulations to Alan Blyth (NCAS, ICAS) who has won the Hugh Robert Mill Award of the Royal Meteorological Society for research into precipitation.

See link: <https://www.rmets.org/news/2018-society-awards-and-prize-winners-announced>



Winner of Aerosol Society Doctoral Student Award (CN Davies Award)

Well done to Amy Peace for winning the Aerosol Society Doctoral Student Award (CN Davies Award) for an essay describing her PhD. She will receive her award and make a presentation at the Aerosol Soc annual meeting.

<https://aerosol-soc.com/grants-and-awards/cn-davies-award/>

In the News

Declan Finney wrote an article for Carbon Brief on UK airport Independent article referring to his UK airport carbon brief article

<https://www.independent.co.uk/environment/heathrow-expansion-airports-climate-net-zero-emissions-goals-a8973991.html>



SUCCESSES & CONGRATULATIONS CONTINUED...

Kirsty Pringle - Aerosol Society Career Development Grant Winner 2019

Kirsty Pringle from CEMAC has been awarded £5k Career Development Grant from the Aerosol Society to put particulate matter (PM2.5) monitors in schools across Bradford. The city of Bradford is home to over 350,000 people and is an area where air pollution levels frequently exceed recommended standards.



Bradford Council are currently developing plans to implement a low emission “Clean Air Zone (CAZ)” to reduce emission from vehicles in the most polluted areas. The CAZ is expected to be in place by the end of 2020. Although CAZs are a popular form of pollution control, there has been limited research into their effectiveness; partly because few cities have had extensive monitoring systems in place before the implementation of a CAZ. The schools sensors network is designed to assess the change in levels that occurs when the CAZ is implemented.



The project has been co-developed by Born in Bradford (BiB) <https://borninbradford.nhs.uk/a-birth> cohort study tracking the health and wellbeing of over 13,500 children in Bradford. During the project, Kirsty and BiB will develop teaching and engagement materials designed to involve the children and their families in the research. This work will pave the way for a more ambitious project that will invite the children to carry portable pollution monitors to examine their exposure to PM2.5 as they walk to school.

Photos: (L) Pupils practising using the portable pollution monitors. (R) Portable pollution monitor.

UPDATE FROM OUR CENTRE OF EXCELLENCE FOR MODELLING THE ATMOSPHERE AND CLIMATE (CEMAC)

Three years of CEMAC

This summer saw CEMAC begin its 4th year of operation, having attracted more than £1.3M in external funding over its first three years, and with more than 20 projects active across its software team. The CEMAC project portfolio continues to broaden, with significant new work in collaboration with COMET (Centre for Observation and Modelling of Earthquakes, Volcanoes and Tectonics) and CPOM (Centre for Polar Observation and Modelling).

The next few months will see CEMAC develop a new strategy for the coming 3-4 years, which will aim to further strengthen core activities in research computing, training and student education, and deepen collaboration with key external partners, including the Met Office and NCAS CMS. The strategy will be developed in close alignment with research institute strategies (including ICAS), to ensure continuation of CEMAC's involvement in developing and delivering the School's most exciting and innovative research, while enabling students to engage with it.

NEW HOME FOR UNIVERSITY'S CLIMATE RESEARCH



The Priestley Building provides a base on the University's main campus for leading climate-related research. Launched in 2016, the [Priestley International Centre for Climate](#) has already brought together world-leading expertise in all the key strands of climate change research.

The centre has more than 300 members from across the University including over 40 from ICAS covering a broad range of research areas. This includes improving predictions of future climate change through laboratory, field and computational modelling studies; developing tools to support decisions about future city infrastructure; and research exploring the cultural significance of climate in art and literature. Now, in its new home, the dedicated space on campus enables the centre to continue fostering collaboration across disciplines that is dedicated to understanding and tackling climate change.

The University Chancellor Dame Jane Francis was joined by Vice-Chancellor Sir Alan Langlands to officially open the new Priestley Building, named after Yorkshire scientist Joseph Priestley, who is credited with the discovery of oxygen and conducted pioneering experiments on the carbon cycle.

The Chancellor said: "The complexity of the climate challenge demands a broad array of ambitious solutions. The new Priestley Building offers a fantastic environment in which to expand the interdisciplinary collaborations necessary to develop the solutions."

The Priestley International Centre for Climate has members from across all of the University's faculties. [Membership](#) is open to any University of Leeds academic staff member or PhD researcher whose work aligns with the [vision](#) of the centre.

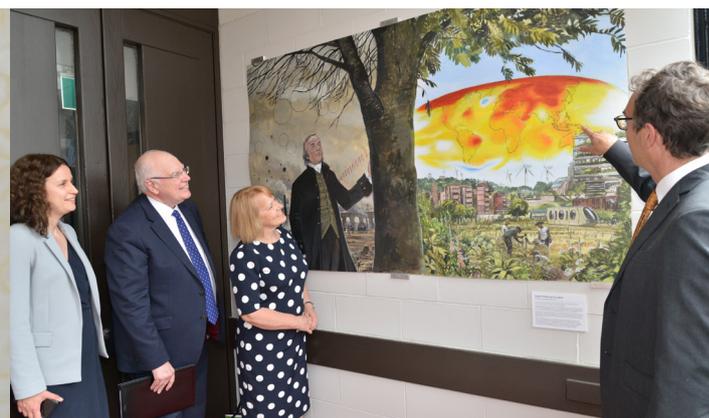
ICAS [Professor Piers Forster](#),

Priestley centre Director and climate scientist on the Committee on Climate Change, said: "This new dedicated space will help take the centre to the next level, attracting the brightest and best students and staff from around the world to work with the great minds already working on climate solutions across the University."

Priestley academics are already at the forefront of international climate research. Eight researchers, which include Piers Forster and three Priestley chairs, are contributing to the Intergovernmental Panel on Climate Change (IPCC) [Sixth Assessment Report](#) – the next comprehensive assessment of the science relating to climate change and is used to inform policymakers, international climate negotiators and other stakeholders.

More recently, a [report](#) including expertise from Leeds climate researchers underpinned the UK Committee on Climate Change report which has led to the groundbreaking commitment from the UK government to reduce greenhouse gas emissions to net zero by 2050.

Photos: (Top) The newly refurbished and named Priestley Building. (Bottom left) Plaque commemorating the building opening (Bottom right) University Chancellor Dame Jane Francis, Vice-Chancellor Sir Alan Langlands, Dr Shona Smith with mural of Yorkshire scientist Joseph Priestley, who discovered oxygen and conducted pioneering experiments on the carbon cycle



OUR PARTNERSHIPS

Updates and new information from our partners: Centre for Polar Observation and Modelling (CPOM), Institute of Meteorology and Climate Research (IMK) at Karlsruhe Institute of Technology (KIT), Met Office, National Centre for Atmospheric Science (NCAS) and National Centre for Earth Observation (NCEO).

CPOM

Celebrating satellites' contribution to polar science

Seven areas of fast-flowing ice on the Antarctic Peninsula have been formally named after Earth observation satellites, following a request by ICAS scientist Dr Anna Hogg.

Dramatic changes in the shape of the Antarctic ice sheet have become emblematic of the climate crisis. Reports of iceberg calving, changes in ice-sheet speed, thickness and mass have informed the climate change debate, and are largely thanks to routine monitoring by an international fleet of Earth observation satellites. Recognising the importance of observations from space, the UK Antarctic Place-names Committee has approved seven new names for international use.

The decision follows a request by Anna Hogg from ICAS and Centre for Polar Observation and Modelling at Leeds, who identified that the major glaciers flowing westwards from the Dyer Plateau on the Antarctic Peninsula are thinning and flowing at rates of more than 1.5 metres a day.

Anna is an expert in Earth observation of the Polar Regions and uses satellite data to study the remote Antarctic and Greenland Ice Sheets. Her research published in 2017, which identified the thinning of the Dyer Plateau and linked the increased ice flow in Western Palmer Land to ocean melting,

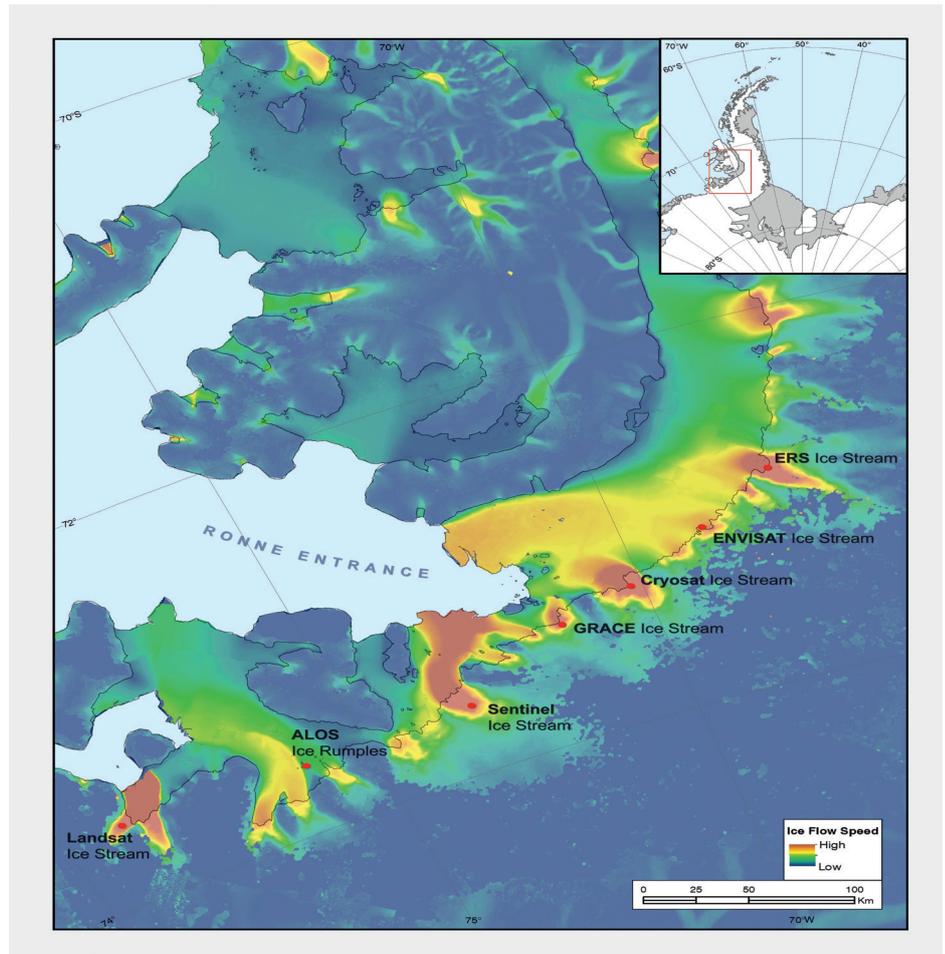


Image: UK Antarctic Place-names Committee Map of the named Glaciers showing Ice Flow Speed

would not have been possible without satellite observations. In deference to the critical role that satellites play in measuring and monitoring Antarctic glaciology, Anna requested that seven glaciers monitored in her study be named after the satellites. The names will be added to the British Antarctic Territory Gazetteer and will be available for use on all maps, charts and in all future publications.

Anna said: "Naming the glaciers after the Earth observation satellites we use to measure them is a great way to celebrate the international collaboration in space, and on big science questions. Satellite observations provide scientists with information on some of the most inaccessible regions on Earth. Without this data we would have a very unclear picture of how our rapidly changing environment is

affecting glaciers around the world.

The European Space Agency satellite missions allow us not only to understand the changes that are taking place in the fastest warming region on the planet but give us the means to predict what could happen to this region in the future. It's fantastic news that the Government of the British Antarctic Territory have formally approved these new place names, which will be on the record forever more."

- The Ers Ice Stream that flows west between Jensen Nunataks and Gunn Peaks was named after the two European Space Agency (ESA) satellites – ERS-1 and ERS-2 – that operated between 1991 and 2011. They provided the first high-resolution, wide-swath and day-and-night images that were used to

OUR PARTNERSHIPS CONTINUED...

- calculate the speed and direction of the flow of glacier ice.
- The Envisat Ice Stream, lies further to the west and commemorates ESA's largest Earth observation satellite, which was launched in 2002 and operated until 2012.
- The Cryosat Ice Stream flows further west and is named after the ESA Earth Explorer satellite launched in 2010. CryoSat was designed specifically to detect changes in the height of polar ice. ICAS scientist and CPOM Director **Professor Andy Shepherd** is the principal scientific advisor to ESA for this mission.
- Still further west lies the Grace Ice Stream, which commemorates the joint Gravity Recovery and Climate Change Experiment (GRACE) mission run by NASA and the German Aerospace Center.
- The Sentinel Ice Stream is named after the more recent series of satellites that ESA develops for the EU's Copernicus programme to the environment and climate change. This programme provides open access to images, allowing the public to easily view and witness ongoing, year-round changes

- in Antarctica and the rest of the world.
- The ALOS Ice Rumples are named after a Japan Aerospace Exploration Agency mission. Its optical and radar image data acquired between 2006 and 2011 have been used to map ice in the polar regions.
- Finally, the Landsat Ice Stream is the most westerly of the newly named glaciers. It is named after the joint NASA/US Geological Survey series of Landsat Earth observation satellites that have been operating since 1972. Landsat has been one of the primary satellite systems used in Antarctic studies, providing over 40 years of uninterrupted mapping of the continent for climate and environment studies.

IMK, Karlsruhe Institute of Technology

New European Partnership Signals Shared Vision

The University of Leeds in the UK and Karlsruhe Institute of Technology (KIT) in Germany have signed a new partnership agreement, to strengthen future research and education opportunities. The alliance will

develop research collaborations and exchange opportunities for undergraduate students, postgraduates and staff.

It builds on a long-standing collaboration between ICAS and KIT's Institute for Meteorology and Climate Research, two of Europe's renowned research institutes for atmospheric science. A Memorandum of Understanding (MoU) was signed in March this year.

Professor Hai-Sui Yu, the University of Leeds' Deputy Vice-Chancellor: International, said: "This MoU is a symbol of our strong commitment to international collaboration and of sharing and exchanging ideas, knowledge and opportunities. "Working with such outstanding international partners helps ensure our research and education makes a difference across the world.

"No matter how Brexit unfolds, such successful partnerships will remain critically important to us. We are bringing together two great institutions, with a shared vision of maintaining and building strong relationships between leading UK and European universities."

KIT Vice President for Innovation and International Affairs, Professor Thomas Hirth, said: "The agreement is an example for the strategic alignment of KIT in the field of international cooperation. With his partners, KIT meets global challenges and problems. In doing so, we strive for sustainable collaborations."

An exchange visit took place in July 2019, when future research collaborations were explored, focusing initially in the fields of climate change, AI and robotics, advanced materials, and data analytics. The visit took place over two days, visiting from KIT were the Vice President, Prof. Dr. Thomas Hirth, Vice-President for Innovation and International Affairs, Prof. Dr. Peter Braesicke, Institute of Meteorology and Climate Research

**Image: Anna Hogg on fieldwork in the Antarctic with elephant seal.
Credit: Anna Hogg.**



OUR PARTNERSHIPS CONTINUED...

–Atmospheric Trace Gases and Remote Sensing,

Prof. Dr. Peter Knippertz, Group Leader, Institute of Meteorology and Climate Research - Department Troposphere Research, Oliver Schmidt, Acting Head, Regional Strategy and Information, International Affairs and Velia Kreienbring, Regional Officer Europe, North America and Australia.

Met Office

Thanks and Handover of Academic Partnership Chair

Dr John Marsham has been appointed Met Office joint Chair at the University of Leeds, leading the Met Office Academic Partnership (MOAP) at Leeds, following **Prof Doug Parker** stepping down after 9 years in the role. John moved to Leeds in 2003 and since 2009 has also been a member of the National Centre for Atmospheric Science. His research focuses on atmospheric convection and tropical weather across time-scales from hours to decades.

Since 2010 when Doug took on the role as the first Met Office joint-chair at Leeds, the partnership has expanded from the original 4 member institutions (Met Office, Leeds, Reading and Exeter) to include Oxford. Leeds now has six Met Office staff as chairs, and in addition there are now also six individuals who are funded by the Met Office but based at Leeds in the University of Leeds Met Office Strategic (LUMOS) Research Group. Recent successes of the Met Office partnership include the ParaCon programme and the Future Climate for Africa programme, where Leeds has played a leading role.

At Leeds the partnership is organised under four broad themes: 'Observations and Processes', 'Atmospheric Composition', 'Climate and Impacts' and 'Weather, Climate

and Social Science'.

John would welcome contact from anyone who would like to explore visits, or research collaboration with anyone in ICAS, NCAS, the Priestley International Centre for Climate, or water@leeds.

NCAS

Data Analysis Tools | 4th December 2019, Leeds.

This training provides talks and interactive user sessions on real data using the cf-python and cf-plot Python tools that help users to read, analyse and plot atmospheric model data. This will be of benefit to Masters, Doctoral students and PDRAs upwards both within NCAS and the broader atmospheric community both within the UK and abroad. Apply now.

Introduction to Scientific Computing | 18th - 22nd November 2019, Leeds.

Skilled computer scientists will introduce you to the fundamentals of scientific computing. You will be tutored by experts from the Centre for Environmental Data Analysis who solve scientific data challenges on a daily basis. Apply now.

Discover more NCAS news at www.ncas.ac.uk and follow them on Twitter [@AtmosScience](https://twitter.com/AtmosScience)

FEATURED PERSON: MARCELO GALDOS



What is your role in ICAS?

Met Office University Academic Fellow

What do you like the most about ICAS?

Being around people who are tackling the same problem - climate change - from different angles and using different approaches.

Why did you choose this career and how did you get here?

My career path has been unorthodox, including international rural development, agricultural extension, non-profit work in poor communities, research in sustainable agricultural systems, environmental consultancy and starting a company. The sum of those experiences has led me here.

What scientific achievement are you most proud of?

Watching other people actually use (and improve) some of my environmental modelling work to support mitigation and adaptation practices in agriculture.

What does a typical working day involve for you?

Writing research proposals and papers, meeting with colleagues and students, running models and analysing data.

What's the most interesting aspect of your job right now?

My research is at the interface of food systems, environment, land use and climate change. There is never a dull moment.

What's the most challenging aspect of your job?

I'm an agronomist and soil scientist by training, collaborating with and learning from climate scientists. This is both a significant challenge and a chance to expand my horizons.

How do you decompress outside work?

Spending time with my family, and on rare occasions, doing absolutely nothing.

What bit of information about you is likely to surprise your colleagues?

I'm a cellist and used to play guitar in a bossa nova band.

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UNIVERSITY OF LEEDS