

*IACS promotes the advancement  
of cryospheric sciences of  
the Earth and solar system*



IACS

International Association  
of Cryospheric Sciences

# IACS NEWSLETTER

December 2018

## IUGG 2019 Montreal

The 27th International Union of Geodesy and Geophysics (IUGG) General Assembly will be held in July 2019 in Montréal, Canada. 2019 marks the 100th anniversary of IUGG. IACS will host or co-host more than 30 symposia between 9-13 July, with a wide range of snow and ice topics. See list below. Waleed Abdalati, University of Colorado, USA, will give the prestigious Union Lecture in Cryospheric Sciences. [Abstract deadline is 18 February](#)



Montreal, Canada. Photo: Montreal tourism.

- JC01 – Projecting Sea Level in the 21st Century and Beyond
- JC02 – Atmosphere-Ocean-Sea Ice Interactions: Local Processes and Global Implications
- JC03 – Mountain Cryosphere Hazards
- JC04 – Declining Glaciers and Snow Cover and Their Impacts on Downstream Hydrology
- JC05 – Climate Change Impacts on Arctic Snow, Permafrost, Lake and River Ice
- JC06 – Is the West Antarctic Ice Sheet Collapsing? - Atmosphere, Ice, And Ocean Interactions
- JC07 – Gravity-Driven Flows in the Earth System
- JC08 – Coupling Processes between the Atmospheric Boundary-Layer and Snow/Ice Surfaces: Observations & Modelling
- JS01 – Cryo seismology
- JG01 – Interactions of Solid Earth, Ice Sheets and Oceans
  
- C01 – Glacier Monitoring from In-Situ and Remotely Sensed Observations
- C02 – Remote Sensing of the Cryosphere - Into an Era of High-Repeat Rate Time Series
- C03 – Advances in Glacier and Ice Cap Modelling
- C04 – Progress in Quantifying Ice-Sheet Surface Mass Balance: Past, Present and Future
- C05 – Fast Glacier Flow: Processes, Observations and Modelling of Ice Streams, Tidewater Glaciers and Surging Glaciers
- C06 – New Frontiers in Paleoclimate Reconstructions and Proxy Interpretations from Ice Cores
- C07 – The Hydrological Cycle at High Latitudes: Variability, Changes and Impacts on the Cryosphere
- C08 – Tropical Glaciers: Mass Changes, Climate Forcing and Impacts
- C09 – Debris Covered Glaciers
- C10 – Challenges in Measuring and Modeling Snow Mechanics
- C11 – Towards the Development of a World Snow Centre of Excellence?
- C12 – Observations and Modeling of Impacts to Snow and Glaciers Due to Deposition of Light-Absorbing Particles
- C13 – Advances in the Application of Terrestrial Cosmogenic Nuclides on Glacial Landscapes
- C14 – Cryospheric Processes and Related Socioeconomic Services
- C15 – 125 Years of the Commission Internationale des Glaciers - Aspects of the History of Cryospheric Sciences
  
- JM08 – Earth System Models: Assessing the Earth System's State and Fate from Regional to Planetary Scales
- JM09 – Satellite Remote Sensing: Vital Information on the Health Of our Planet
- JP04 – Past Changes, in the Atmosphere, Oceans and Cryosphere, and their Relevance For Future Climate.
- H17 – Advances in Snow Hydrology
- H18 – Advances In Remote Observation of Seasonal Snow

Session descriptions with convener teams of the cryospheric symposia is here: [iugg2019montreal.com/c](http://iugg2019montreal.com/c)

# IUGG Early-career scientist awardees

The awards are given for 'outstanding research in Earth and space sciences and for international research cooperation'.

Dr. Marie Dumont from Météo-France/CNRS, Centre d'Études de la Neige, Grenoble, France, received the award for Cryospheric Sciences for her seminal work on radiative properties of snow and ice leading to an improved understanding of the mass and energy budget of Earth's snow, glaciers, and ice sheets. Marie was a key member of the IACS Working Group MicroSNOW.

Dr. Emilie Capron from the British Antarctic Survey, Cambridge, United Kingdom, received the award for Climatology for her outstanding contributions to the characterization of climate dynamic from ice core analyses through a collaborative international approach involving links with other archives and modelling.

IACS congratulates both of them. The awards will be presented at the IUGG General Assembly in Montreal in July 2019 where they will give plenary lectures.



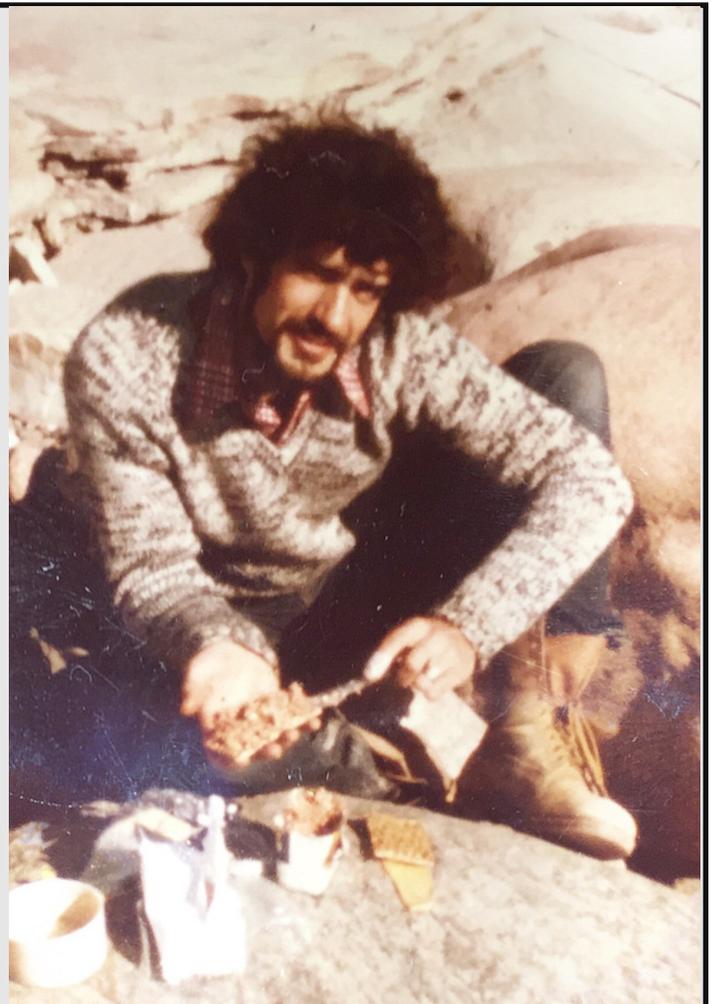
**Marie Dumont (upper photo) and Emilie Capron (lower photo) have received awards for outstanding research as early-career scientists. Photo: Dominique Lecorps and T. Mikkelsen.**

## Farewell Graham Cogley

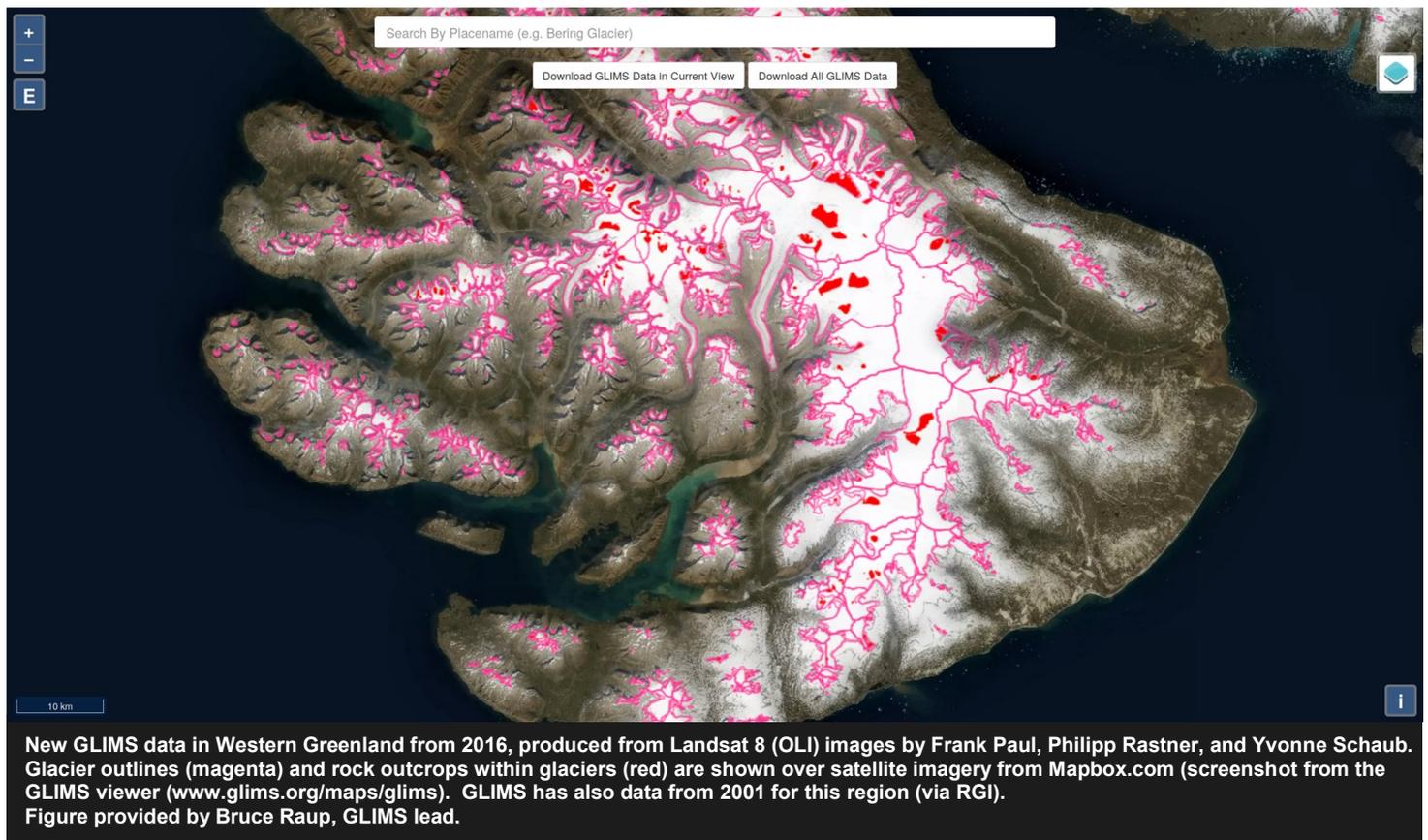
Our friend and colleague, J Graham Cogley, Professor Emeritus in the Department of Geography, Trent University, Canada, died on 4 October 2018 in Peterborough, Ontario, at the age of 70. Graham made substantial and enduring contributions to glaciology over nearly 50 years, and in particular to the understanding and quantification of glacier mass balance and change. His most recent work focussed on global glacier inventories.

Graham made major contributions to IACS activities. Most recently, he was co-chair of the IACS Working Group on the Randolph Glacier Inventory (RGI) and infrastructure for glacier monitoring (since 2014). Earlier he chaired the IACS Working Group on Mass-balance Terminology and Methods (2008-2012). This WG produced the comprehensive and definitive 2011 "Glossary of mass balance and related terms" which was published and freely distributed by the International Hydrological Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO-IHP). Graham also served as member of the advisory board of the Global Terrestrial Network for Glaciers (GTN-G) since its start in 2010 till now. This board is overseen by IACS.

He was well known for his work as an editor of glaciological publications, a task he always undertook, enthusiastically, punctually, and with attention to detail and impartial fairness. In 2016 Graham was appointed as Chief Editor of the International Glaciological Society. Graham Cogley will be sadly missed by IACS and by the entire cryospheric community.



**This photo of Graham having lunch outdoors is sole property of the Cogley family. Graham's wife Katherine wrote us that the boots in the picture are still in the back of Graham's car. They are old and the soles have no treads but he still held on to them, "just in case". As a young man, Graham said he barely knew how to make a cup of instant coffee. He taught himself to be an excellent cook and to love very strong coffee. Even in his sickest days, Graham rallied if someone brought him a cup of coffee. Coffee and a cigarette - Graham's trademarks. Another interest of Graham was gardening. He developed into an excellent self taught gardener and spent hours perfecting the gardens in the yard, with roses being his favourite.**



## GLIMS update

GLIMS (Global Land Ice Measurements from Space) is a project designed to monitor the world's glaciers primarily using data from optical satellite instruments. It began as an ASTER Science Team activity around 1997. From those early days, GLIMS has been based on a network of collaborators from institutions, called Regional Centers (RCs), around the world, and this work has led to the development of a database of all glaciers in the world, many mapped for more than one time. The RC concept and organization has been integral to the success of GLIMS thus far. As GLIMS has grown and as glacier mapping data have increasingly been produced by a variety of people for various purposes, the mechanisms for including data into GLIMS have evolved. Adding new data has become easier as we have developed software tools to ease the packaging of disparate data sets with metadata such as base imagery. Data can be downloaded from GLIMS using either a map- or parameter-based search interface [www.glims.org](http://www.glims.org).

Those wanting to submit their glacier outlines to GLIMS can now do so with less effort than in the past. A short tutorial guides the researcher through the process of assembling all the necessary pieces at [www.glims.org/MapsAndDocs](http://www.glims.org/MapsAndDocs)

### New glacier data in GLIMS

Recently added data include glacier outlines (and related data) for the regions of: (\*multi-temporal ) **Austria\***, **Turkey**, **Irian Jaya\***, **Olympic Peninsula (USA)**, **Norway\***, **Svalbard\***, **Patagonia\***, **Caucasus mountains**, **Ellesmere Island ice caps**, **Melville Island ice caps**, **Nevado Coropuna ice cap (Peru)**, **Western Greenland**, **Franz Josef Land** and **Novaya Zemlya (Russia)**.



### GLIMS and RGI

The Randolph Glacier Inventory (RGI), also hosted by GLIMS, is a simplified data set that includes only one outline per glacier and as close as possible to the same time. It is a globally complete collection of digital outlines of glaciers, excluding the ice sheets. GLIMS and the RGI group work closely together, and all data submitted is sent to both groups. In addition, we are working on tools to extract this kind of information directly from the GLIMS Glacier Database, which will obviate the need for the RGI as a separate data set in the future.

The IACS working group on RGI (Randolph Glacier Inventory and infrastructure for glacier monitoring) aims to maintain and develop the RGI as a resource for global/regional-scale mass-balance assessments and projections. The RGI working group periodically release updated versions of the inventory, the current version is RGI version 6.0 released 28 July 2017. [www.glims.org/RGI/](http://www.glims.org/RGI/)



Gråsubreen in Jotunheimen, southern Norway. Gråsubreen is a 2 km<sup>2</sup> polythermal glacier located in the interior. It has a small mass turnover and central parts are often free of snow due to wind. Mass balance investigations have been carried out since 1962 revealing a mass loss in most years. The glacier had a negative mass balance also in 2018. Photo: Liss M. Andreassen, 16 October 2018.

## Call for nominations for IACS Early-Career Scientist awards

The IACS Early Career Scientist Prize is awarded to two nominated early career scientists who are assessed as having published the best scientific papers on a cryospheric subject during the calendar years 2017 or 2018. The award is a cash prize of € 1000 plus a certificate, which will be awarded at the IUGG Assembly in Montreal in July 2019.

Nomination form and guidelines are found on the [IACS webpage](#). Nomination deadline is 15 February 2019.

## Nominations for IACS bureau

A new Bureau will be elected at the Plenary Administrative Session of IACS to be held during the IUGG 2019. Suggestions of cryospheric scientists suitable for any position within the IACS Bureau (except President, but including President-Elect) are most welcome from the community. Nomination packages should be sent to the Chair of the independent Nomination Panel, Ralf Greve ([greve@lowtem.hokudai.ac.jp](mailto:greve@lowtem.hokudai.ac.jp)) no later than 7 January 2019.

## Travel grant to IUGG 2019

IACS and IUGG will together support a large number of travel grants to enable students, other early career scientists, and attendees from less-affluent countries to come to Montreal. More information is available here: [iugg2019montreal.com/travel-grant](http://iugg2019montreal.com/travel-grant)

## About IACS

The International Association of Cryospheric Sciences (IACS) is a constituent Association of the International Union of Geodesy and Geophysics (IUGG).

IACS promotes and sponsors workshops, symposia and educational activities. IACS has targeted working groups on cryospheric topics.

## IACS membership

IACS offers free individual membership: [www.cryosphericosciences.org](http://www.cryosphericosciences.org)

As IACS member

- you will receive regular information about IACS activities and opportunities - as this newsletter sent to members by email (3-4 times a year).
- you are eligible to engage in IACS activities and bodies.
- you are eligible for IACS sponsorship and financial support for workshops, summer schools, and other IACS-sponsored activities
- you are eligible for the IACS early-career scientist prize (if you qualify as ECS)