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International Society of Biometeorology



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Compiled by Elena Grigorieva and Jennifer Vanos

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New Executive Board for 2020 – 2023

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A Message from the President

Marie R Keatley

Dear Colleagues,

I hope this finds you well. It has been a very busy time since our last Bulletin.

- **Our first virtual Congress:**
 - My thanks to the members of Executive Board who did the heavy lifting in relation to the organization: Scott Sheridan – Congress Chair, Jennifer Fitchett, Michael Allen and Adam Kalkstein.
 - Thanks also to the Scientific Review Committee, Session, Commission and Group Chairs – I know that several Chairs were up very late or very early their time to contribute to the successful running of the Congress.
 - For interest, the word cloud below is based on the top 100 words in the titles of papers and posters presented (Fig. 1).
 - Once again it is a pleasure to thank the Tromp Foundation for the Best Scientific Paper Award. On this occasion there were two awards. Congratulations to Claudia di Napoli and her co-authors for the 2020 Award *Verification of 'Heat Stress Thresholds for a Health-Based Heat-Wave Definition'*, and Josh Foster and his co-authors for the 2021 Award *'An advanced empirical model for quantifying the impact of heat and climate change on human physical work capacity'*.
 - Hopefully, you noticed that the Executive Board took the decision to set the registration fees to enable as many people as possible to attend. This is also the philosophy the Executive Board has towards membership dues for the Society.
 - Finally, thank-you to each of the you who attended the Congress.

John Gaughan	Laurence S Kalkstein	Luis B. Lecha Estela
2008 -2020: Treasurer	1999-2002: Councilor - Northern America 2005-2008: President	2014-2020: Councilor - Latin America and the Caribbean
Animal Biometeorology	Human health and well-being	Meteorology and Bioclimatology



Figure 2. ISB, three Honorary memberships

- **Governance**
- Statutes:
 - The amended version of the Statutes were approved by a vote which closed on October 5th at midnight (EDT).
 - Thanks to the sub-committee who work on the amendments to the Statutes over the course of year: John Gaughan, Luis Lecha B Estela, Marie Keatley, Mark Schwartz, Michael Allen, Pablo Fernández de Arróyabe Hernáez and Scott Sheridan.
 - One of the more significant changes to the Statutes is that anyone who is a member will be able to vote.
 - The Statutes are available on the website.
- Diversity and Inclusion Statement:
 - The Executive Board has approved a Diversity and Inclusion Statement for the Society.
 - Thanks to the sub-committee who worked on this: Jennifer Fitchett, Jennifer Vanos, Angela Lees, Dan Vecellio, Marie Keatley and Michael Allen.

- **International Affiliations**

- The Society has signed Memorandums of Understanding (MoU) with the American Meteorological Society and the European Meteorological Society.
- A benefit of the MoU with the European Meteorological Society is the registration fees for Conferences/Congresses will be same for members of both Societies.

Kind regards, Marie.

Report on the Virtual International Congress of Biometeorology “Connecting our World: Biometeorology 2021”

From 20-22 September the International Society of Biometeorology hosted its first ever Virtual International Congress of Biometeorology, “Connecting our World: Biometeorology 2021”. Organized by the Executive Board, led by Scott Sheridan, Michael Allen, Jennifer Fitchett, and Adam Kalkstein, a total of 255 delegates, representing 44 countries, participated in the meeting. The most represented countries were the USA with 57, Brazil with 26, Poland and Australia with 16 each, and India with 14. University professors, government researchers, weather forecasters, local health officials, private industry representatives, and at least 22 graduate students were all part of the 3-day event.

The first day of the event featured several guest roundtable events that were open to all, even those not registered for the congress, and covered themes such as Climate Change and Production Animals, the UTCI, and Cool Cities. Several commission meetings and the Students and New Professionals Group also met that day. Tuesday and Wednesday featured a mixture of live presentations and poster discussions, organized thematically on Tuesday, and regionally on Wednesday.

Feedback on the conference was overall very supportive, with many positive comments about the ability for the event to bring together biometeorologists

from across the world, without travel and registration costs as a limiting factor. While the many time zones was an inevitable barrier, the conference was staggered to last up to 14 hours on Tuesday and Wednesday to allow for ample participation in parts of the event regardless of time zone. The Executive Board of ISB will consider potentially offering hybrid conferences in the future, as a way of taking advantage of the changes in how people meet over the past year and a half.

Participants can still access all material on the site <https://www.eventscribe.net/2021/ICB2021/> through December.

Scott Sheridan, 1st Virtual Congress Chair

Best Paper 2020 and Best Paper 2021 Awards from Tromp Foundation

During the General Meeting at ICB 2021 on September 21, 2021, the Solco W. Tromp Foundation awarded two excellent papers with the Best Paper 2020 and Best Paper 2021 Awards.

The Foundation is named after Solco W. Tromp who devoted part of his legacy to this foundation. The mission of the foundation is to promote excellence in biometeorological science and to support young scientists to attend conferences and strengthen the network of biometeorologists.

In 1955 Solco W. Tromp was co-founder of the International Society for Biometeorology of which he was Secretary-General until 1976.

Dr. Tromp fought to get recognition for biometeorology as a multidisciplinary science until his death in 1983. Since many years the Tromp Foundation has awarded excellent scientific papers of young biometeorologists at the International Congresses of Biometeorology as has been done at ICB2021.

For the 2020/2021 ICB Tromp Award an overwhelming number of 22 excellent papers have been submitted. The jury formed by three Board Members of the Tromp Foundation had a hard job to identify the best papers. As the congress had to be cancelled last year, and there has not been

any chance to award a paper, the Tromp Foundation decided to award two papers this time, one for 2020 and one for 2021.

The award for the best ISB Paper 2020 goes to Claudia di Napoli and her co-authors Florian Pappenberger and Hannah L. Cloke for the paper titled “Verification of Heat Stress Thresholds for a Health-Based Heat-Wave Definition”. The paper has been published in the Journal of Applied Meteorology and Climatology in 2019.

Heat waves increasingly represent a threat to human health and excess mortality is one of the associated negative effects. A health-based definition for heat waves is therefore relevant, especially for early warning purposes.

Such a definition is derived in the paper by the state of the art Universal Thermal Climate Index (UTCI). The authors found that the UTCI 95th percentile can be used as a health-meaningful threshold for a potential heat-health watch warning system.

The paper is very well written. It analyses a very important problem in human biometeorology with the state of the art methods of assessing thermal stress (UTCI). There is a high potential that the results can be applied in heat watch/warning systems.

The award for the best ISB paper 2021 goes to Josh Foster and his co-authors James W. Smallcombe, Simon Hodder, Ollie Jay, Andreas D. Flouris, Lars Nybo, and George Havenith. The title of the paper is “An advanced empirical model for quantifying the impact of heat and climate change on human physical work capacity”. It has been published in 2021 in the International Journal of Biometeorology.

Occupational heat stress has negative effects on physical work capacity (PWC) with large economic consequences for industries and in consequence on regions vulnerable to global warming. In this sense the paper addresses a very relevant topic.

The study described in the paper is based on very extensive climate chamber measurements with 40 subjects being exposed to several different thermal

situations each. At each subject a range of thermophysiological measurement were taken.

The authors used different thermal reference parameters like the Wet Bulb Globe Temperature (WBGT), Humidex and Heat Index, but also the UTCI.

They showed that PWC is strongly influenced by air temperature and humidity and that skin temperature is a good thermo-physiological indicator for changes in PWC. Equations for PWC are now available based on air temperature and humidity for a suite of heat stress assessment metrics, and mean skin temperature.

This paper is very innovative, well written, and the results have a great potential to be applied elsewhere also in view of thermal stress caused by global warming.

The Tromp Foundation plans to again award an excellent biometeorological paper at ICB2023 in Tempe, Arizona.

Dr. Peter Hoeppe, the Tromp Foundation.

The EUMETNET AutoPollen Programme: Establishing an automatic pollen monitoring network across Europe

Pollen allergy and asthma affect between 15-40% of the European population and as such are some of the most common chronic diseases in the region. Related direct and indirect health costs have been estimated to be between €50-150 billion per year. Air pollution and extreme weather can further exacerbate pollen allergy and it is believed that, together with other environmental elements, these factors have played a role in the increasing prevalence of pollen allergy in Europe over the past decades.

Practical mitigation and adaptation measures are based on pollen observations. These data are used by physicians for diagnosis, treatment, clinical studies, and education. They are also used for empirical and

numerical pollen forecasts, which in turn aid allergy sufferers to effectively plan their activities and medication intake. Furthermore, long-term pollen data are useful for phenological and climate change studies as well as the monitoring of invasive species, amongst other things.

At present, most pollen monitoring networks are based on manual observations which suffer from poor time resolution and long delays in data availability. However, recent technological developments provide the possibility to make automatic pollen observations that are revolutionising the information that can be made available to end-users. Such timely information, and the enhanced forecasts this enables, will vastly improve the treatment and lives of allergy sufferers.

The [AutoPollen programme](#) seeks to take full advantage of the large potential for progress that automatic pollen observations provide. It brings together a consortium from across Europe with the multidisciplinary expertise needed to address the challenges along the entire information chain – from the actual observation through to the final end-user defined product. The programme is particularly innovative in its cooperation and standardisation from-the-start approach.

The main goal of AutoPollen is to establish a European automatic pollen monitoring network, covering all aspects of the information chain from ensuring measurement quality through to developing products and services for end-users. The programme has brought together a number of national or regional networks to form a hybrid continental network based on different measurement techniques. AutoPollen is collaborating with the metrology community and the CEN (European Normalisation Committee) to validate methods, calibrate instruments, and define standards for automatic pollen monitoring. An international intercomparison campaign was held in Munich, Germany, during the 2021 pollen season and results will inform about the capabilities of a wide range of different instruments currently on the market and under development. AutoPollen participants are also working to improve numerical forecasts through adapting models to take into account the real-time measurements from the network. The programme also engages actively with stakeholder across many domains, this to ensure that end-products are

designed with their needs as priority, to share multidisciplinary expertise and to ensure synergy and collaboration.

The AutoPollen Programme is coordinated by the Swiss Federal Office of Meteorology and Climatology MeteoSwiss and includes a wide range of participants, from [EUMETNET](#) members to universities, research institutes, and patient organisations, reflecting the diverse landscape of institutes involved in pollen monitoring across Europe. Furthermore, the programme collaborates with several European-level projects and organisations, including: the CAMS-23 project, the COST Action ADOPT (New Approaches in Detection of Pathogens and Aeroallergens – CA18226), the EMPIR AEROMET-2 project, the European Committee for Normalisation (CEN), the European Aerobiology Society (EAS), and the European Federation of Allergy and Airways diseases patients’ associations (EFA).

From Bernard Clot and Fiona Tummon, MeteoSwiss

Upcoming Conferences

American Meteorological Society Annual Meeting

Houston, TX 23–27 January 2022



Theme Information (from the [AMS website](#)):

Environmental Security: weather, water and climate for a more secure world

We are seeing a growing influence of weather, water, and climate on the security of nations and their peoples due to a rapidly increasing global population (including a growing percentage that are migrating to coastal

areas and/or away from areas of crises) coupled with evolving human and national security impacts from the disruption of weather and climate norms.

The theme of Environmental Security will inform AMS members and meeting attendees on the connections between our scientific field and larger societal impacts, and it will demonstrate how important our contributions are to the basic security needs of the United States and the world, particularly for vulnerable groups.

The 102nd Annual Meeting provides an opportunity to bring together world-class experts on extreme weather and climate with researchers in the fields of water quality/scarcity, energy, food, and health/diseases. This two-way exchange of expertise will inspire new insights into the linkages and impacts among these diverse scientific disciplines and illustrate how water, weather, and climate research can help shape policy to benefit all areas of environmental security.

Details: <https://annual.ametsoc.org/index.cfm/2022/>

CCTR 2022

Virtual CCTR 2022: Seventh International Conference on Climate, Tourism and Recreation – CCTR 2022

Virtual conference, worldwide, Bø, Norway, March 29-30, 2022

Free registration, more information here:

<https://martinfalk5.wixsite.com/cctr2022>

[The International Society of Biometeorology \(ISB\)](#), in collaboration with the University of South-Eastern Norway, School of Business, Faculty of Humanities, Sports and Educational Science; Faculty of Technology, Natural Sciences and Maritime Sciences and Centre for Sustainable Transition invites to the Seventh International Conference on Climate, Tourism and Recreation – CCTR 2022.

Research on the interrelationships between weather, climate and climate change and the tourism and recreation sector has developed rapidly over the

past decades. Tourism is an important source of income that renders opportunities for growth, particularly in sparsely populated areas. However, increased tourism may lead to a paradox, when it on the one hand may add to climate change, and on the other is threatened by it (especially so winter tourism). Tourism and travel are a factor causing major greenhouse gas emissions with air transportation accounting for the largest share. Regionalised climate models show that many places used for recreation and tourism are disproportionately negatively affected by climate change based on the medium and high emission scenarios (RCP 4.5 and 8.5) (IPCC 2014). In contrast, if the climate changes, summer destinations in some areas may become more attractive for visitors. The emissions caused by the tourism and travel industry are increasingly regarded as a problem (Lenzen et al. 2018).

The CCTR 2022 conference provides a forum for researchers and the exchange of ideas and experiences related to climate change, tourism and recreation. The focus is on policies, practices and innovative solutions and is relevant for both academics and professionals in the field. This is an interdisciplinary conference aimed at researchers from the fields of geography, tourism, leisure, geographic information systems, sustainability management, sport, outdoor studies, ecology and the environment. Keynote speakers will be announced shortly.

List of Topics:

- The climate/weather and tourism/recreation relationship
- Tourism and climate change adaptation
- Carbon footprints of tourists and their mitigation
- Tourism and recreation's resilience, vulnerability and adaptation to climate change
- Climate services/communications/arts and tourism-recreation
- Indigenous knowledge, tourism and climate change
- Tourism climatology
- COVID-19 pandemic, tourism-recreation, and climate-weather
- Last chance tourism from a climate change perspective

- Methods related to climate change and tourism
- Environmental sustainability reporting of tourism and recreation firms
- Sustainable business strategies of tourism firms
- Sustainable transportation modes

Details at: <https://www.easychair.org/cfp/VirtualCCTR2022>