Scientific Committee on Thermal Factors (SCTF)

1st Meeting of ICOH SCTF (2018-2021)
Meeting on the Occupational Health and Productivity Impacts of Workplace Heat in Relation to Global and Local Climate Change

Time: Friday, 3 May 2019, 9:00a.m. to 12:00p.m.

Venue: Massey University, Wellington, New Zealand

Participants: Annex I

Aims:

A. To receive updates on the scientific evidence on increasing environmental and workplace heat as a health risk factor from globally active scientists and discuss gaps in the evidence;

B. To establish contacts for potential new research collaboration;

C. To discuss plans for the ICOH SCTF and to discuss a proposed SCTF plan for a global consensus report on methods to quantify heat effects on occupational health and productivity in the context of climate change.

1. **Welcome and Introduction**

1.1 Jason Lee and Tord Kjellstrom welcomed onsite and online participants. Participants of the meeting introduced themselves. Tord Kjellstrom established the lack of attention given to the impact of heat on occupational health and need for more epidemiological studies, especially on migrant workers with high manual work and poor health status. Jason Lee encouraged the committee to harness their various expertise to address this mandate.

2. **Announcements**

2.1 Advertisement of SCTF ICOH membership: prospective members may apply with the endorsement of three ICOH members (Annex II).

2.2 The next in-person meeting will be held in conjunction with the International Conference on Heat-related Illnesses in Kitakyushu, Japan. The conference is on 27-28 Oct 2019 and is to be organized by Seichi Horie.

2.3 A new Heat Health and Work Productivity Research Programme will be initiated at the NUS Global Asia Institute from July 2019 (http://www.gai.nus.edu.sg). Jason Lee encouraged members to consider tapping on this platform to foster collaborative research.

3. **Summary of Presentations from the 27th Epidemiology in Occupational Health (EPICOH) conference on 29 April – 2 May 2019.**

3.1 Onsite members (bold and underlined) recapped their presentations from the *Mini Symposium on Climate Change and from the Occupation Health Effects of Heat session* at the conference. Abstracts can be found online. Blesson Varghese was not present.

3.2 Mini Symposium on Climate Change

3.2.1 Andreas Fluoris, Lucka Kajfez Bogataj, **Tord Kjellstrom**, Nathan Morris, Lars Nybo
Solutions to prevent occupational health and productivity effects of heat
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A68; DOI: 10.1136/OEM-2019-EPI.183;
Abstract: https://bit.ly/2VUqpjy
Presentation: https://bit.ly/2MeHLIG

3.2.2 **Vidhya Venugopal**, PK Latha, S Rekha, K Manikandan, Tord Kjellstrom
Risk factors for heat strain – comparing indoor and outdoor workers in the changing climate scenario

Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A68-A69; DOI: 10.1136/OEM-2019-EPI.184;
Abstract: https://bit.ly/2wp4PJI
Presentation: https://bit.ly/2XcJSxx

3.2.3 **Wenjia Cai**, Mengzhen Zhao, Yidan Chen, Can Wang
Estimating economic impact of heat on china's labor productivity: new evidence from a CGE model
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A69; DOI: 10.1136/OEM-2019-EPI.185;
Abstract: https://bit.ly/2Mfrmn9

3.2.4 **Jason Lee**
New initiatives in international collaboration for describing the occupational heat hazards via epidemiological studies and modeling
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A69; DOI: 10.1136/OEM-2019-EPI.186;
Abstract: https://bit.ly/2JJpS2B

3.3 Presented at *Occupation Health Effects of Heat* Session

3.3.1 **Marc Schenker**, Diane Mitchell, Tracey Armitage, Daniel Tancredi
Risk of heat related illness in latino agricultural workers: environmental temperature and activity levels
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A71-A72; DOI: 10.1136/OEM-2019-EPI.192;
Abstract: https://bit.ly/30OpMf7

3.3.2 **Bruno Lemke**, Tord Kjellstrom
Epidemiological descriptions of occupational health effects of climate change
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A72; DOI: 10.1136/OEM-2019-EPI.193;
Abstract: https://bit.ly/2EB0qrW
Presentation: https://bit.ly/2WaAn5H

3.3.3 Blesson Varghese, Alana Hansen, Susan Williams, Peng Bi, Dino Pisaniello
Heat and injury in the workplace: perspectives from health and safety representatives
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A72; DOI: 10.1136/OEM-2019-EPI.194;
Abstract: https://bit.ly/2K8xZoJ

3.3.4 Blesson Varghese, Dino Pisaniello, Alana Hansen, Susan Williams, Peng Bi
Exploring occupational injury experiences during hot weather: a national survey of health and safety professionals
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A72-A73; DOI: 10.1136/OEM-2019-EPI.195;
Abstract: https://bit.ly/2Mh2L1e

3.3.5 Ashley Akerman, Jim Cotter, **Tord Kjellstrom**
Occupational heat exposure and cardiovascular health risks related to climate change in pacific countries;
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A73; DOI: 10.1136/OEM-2019-EPI.196;
Abstract: https://bit.ly/2VWIg9R
Presentation: https://bit.ly/2Meg0jv

3.3.6 **Matthias Otto**, Tord Kjellstrom, Bruno Lemke
Occupational heat stress due to climate change: estimating future heat wave hazards
Abstract available at: Occupational and Environmental Medicine Apr 2019, 76 (Suppl 1) A73; DOI: 10.1136/OEM-2019-EPI.197;
Abstract: https://bit.ly/2MakQ0R
Presentation: https://bit.ly/2I6T54f

4. **General Discussion**

Purpose of the collaboration meeting was to find converging points for all researchers working on interdisciplinary heat & health work.

4.1 The committee discussed the perimeters of the research, i.e. the recipients of outputs. While research needs to define "occupation" with care to establish consistency, Tord Kjellstrom mentioned that heat, unlike lead, would inevitably impact most workers. Jason Lee summarized that there is a need to walk the line between being relevant, so that the research gets picked up, and confining the study within occupational health research.

4.2 The committee briefly discussed about its target audience. There is a consensus that the research needs to be relevant to attract funding. It was suggested that there should be an emphasis on element of safety risks to gain attention. Carin Hakansta highlighted the funding opportunities with EU in collaboration with Swedish Researchers that needs to be harnessed.

4.3 Besides scientific papers/reports, outputs should be made layman. Jason Lee proposed utilizing social media as a platform to gain awareness. Tord Kjellstrom encouraged the committee to conduct more studies in collaboration with sports scientists/physiologists to ensure strong physiological basis in prospective findings.

4.4 Jason Lee encouraged young members to join the committee. Young members can benefit from the wealth of experience in the present committee as much and as soon as possible.

4.5 Committee also agreed that scientific research at this point is key. Manoj Potapohn noted that this committee should aspire to provide practical interventions and offer long-term solutions.

4.6 Marc Schenker suggested that the focus of the committee could be to refine risk estimates and advocacy for better protective solutions.

4.7 Wen-Jia Cai emphasized doing calculations of economic impacts (both direct and indirect) of heat stress in the current scenario and estimate future economic losses that might encourage industries to be proactive in protecting workers health.

4.8 Ross di Corleto highlighted the impact of heat on accidents, that positioning heat impact on safety would heighten the importance of the committee's work. Jim Cotter and Elspeth Opperman stressed on the need to study cognitive abilities, behavioral responses and cultural understandings of heat stress and its management.

5. **Conclusions**

5.1 To jointly prepare a scientific summary report of heat effects on working people and to identify gaps in current evidence.

5.2 To prepare an agreed standard protocol for field studies of heat effects at workplaces, and to promote its use to produce data for a global picture of this occupational health problem.

5.3 To develop new joint analysis of the potential future impacts of heat on occupational health and productivity.

5.4 To seek funding for these joint activities.



Annex I

List of Attendees

1. Present:

   Tord KJELLSTROM (Advisor), Health and Environment International Trust, Mapua
   Jason LEE (Chair), National University of Singapore, Singapore
   CAI Wen Jia, Tsinghua University, Beijing
   Dave MCLEAN, Massey University, Wellington
   Ross DI CORLETO, Monitor Consulting Services, Brisbane
   Carin HAKANSTA, Karolinska Institute, Stockholm
   Bruno LEMKE, Nelson-Marlborough Institute of Technology, Nelson
   Matthias OTTO, Nelson-Marlborough Institute of Technology, Nelson
   Manoj POTAPOHN, Chiang Mai University, Chiang Mai
   Marc SCHENKER, University of California, Davis
   Vidhya VENUGOPAL, Sri Ramachandra University, Chennai
   ZHAO Meng Zhen, Tsinghua University, Beijing

2. Present via Web:

   Yoonjung AHN, Florida State University, Florida
   Matt BREARLEY, Charles Darwin University, Darwin
   Jim COTTER, Otago University, Otago
   Nicholas GOH, National University of Singapore, Singapore
   Seichi HORIE, University of Occupational and Environmental Health, Kitakyushu
   Yuri HOSOKAWA, Waseda University, Tokyo
   Elspeth OPPERMAN, University of Munich, Munich
   Dennis WESSELBAUM, Otago University, Otago

From left: Cai Wen Jia, Zhao Meng Zhen, Matthias Otto, Tord Kjellstrom, Vidhya Venugopal, Jason Lee, Bruno Lemke, Marc Schenker, Dave Mclean, Manoj Potapohn, Ross di Corleto

Yoonjung Ahn

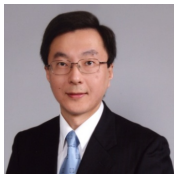
Yuri Hosokawa

Matt Brearley

Elspeth Opperman

Jim Cotter

Dennis Wesselbaum



Seichi Horie

Nicholas Goh

Annex II

Value of Membership in ICOH SCTF

International Commission on Occupational Health

Founded in 1906 as Permanent Commission

9 Feb 2019

VALUE OF MEMBERSHIP IN
ICOH SCIENTIFIC COMMITTEE ON THERMAL FACTORS

The International Commission on Occupational Health (ICOH) is the oldest scientific association in the field founded in 1906, with more than 2000 members in 93 countries. ICOH is an NGO recognized by the United Nations and has a close working relationship with the International Labour Organization and World Health Organization. Reports produced within ICOH can therefore have a more effective influence on occupational health and safety policies and practices around the world. ICOH holds a global conference every 3 years (the next one is in Melbourne, Australia in 2021) and organizes other special meetings and consultations each year.

ICOH has 37 Scientific Committees on specific topics of importance in Occupational Health and Safety. One of these topics is Heat and Cold conditions in workplaces, which creates serious health risks and undermines labour productivity in many jobs. Climate change will create new challenges for this area. The **Scientific Committee on Thermal Factors (SCTF)** includes experts in this field, and organizes meetings, web-based discussions, linkages between scientists in different countries and disciplines, as well as produces consensus reports on key topics.

The Chair of the SCTF for 2019-2021 is Dr Jason Lee, National University of Singapore (email: phsjlkw@nus.edu.sg) and the Secretary is Sirkka Rissanen, Finnish National Institute of Occupational Health and Safety (email: Sirkka.Rissanen@ttl.fi).

The current plans for the SCTF is to become an active research and analysis network of dedicated scientists working for protection of working people from excessive heat and cold exposures in current and future work environments, including analysis of climate change impact and mitigation analysis. **This will enable SCTF members:** to become co-authors on reports in major scientific journals, to collaborate across country boundaries, to get recognition for their own research work, and to be part of future funded global activities.

Please consider joining ICOH and this Scientific Committee!

Membership is not extremely expensive. The **3-year** fees for 2018-2020 are:

Countries with GDP (USD)	**< 5,000**	**5,000 - 15,000**	**>15,000**
Active Members	45 CHF	72 CHF	345 CHF
Young Members < 34 years old	30 CHF	45 CHF	72 CHF
Retired Members 65 years old	30 CHF	60 CHF	90 CHF

For further information, please check: http://www.icohweb.org/site/members-info.asp

Sincerely Yours
Jason Lee