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Union Géographique Internationale

Commission for
Water Sustainability



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A. Membership

a. Composition of Steering Committee (SC)

In line with requirements of the IGU-statute regarding maximal duration of service some long-standing members of the SC had to be replaced by new colleagues in 2020 taking geographical representativity, age- and gender aspects as well as track records of activities in within the Commission and seniority of the various candidates into account. In order to retain their most valuable input proffs. Frolova and He as some of the longest serving SC-members were appointed as non-executive advisory members.

On behalf of the Commission the Chair wishes to express our most sincere gratitude for their unfailing support over many years to Proffs. **Natalia Frolova**, **Chansheng He** and **Ivan Canjevac**.

We congratulate and welcome the following new members of the SC proffs. **Danijel Orešić** (Croatia), **Heejun Chang** (USA) and Dr. **Marcela Hebe Gonzalez** (Argentina). We also congratulate Proffs. **Liliana Zaharia** and **Daniel Karthe** to their new appointment as Vice Chairs of the Commission.

The composition of the newly appointed SC for the period **2020-2024** is as follows:

SC-Function	Name	Country, sex	SC since	max. to	Affiliation	Portfolio
Chair	Prof. Dr. habil. Frank Winde	South Africa, male	2012	2024	North-West University, Vanderbijlpark Campus, Geography and Environmental Studies, PO Box 1174, Vanderbijlpark, 1900; Extraordinary Professor Wismut GmbH, 09117 Chemnitz, Jagdschänkenstraße 29, Monitoring and Radiation Protection, Tel. +49 151 2571 3237, frank.winde@gmail.com	management, reporting, strategy development, member base and recruitment, website and public visibility
Vice Chair	Prof. Dr. Daniel Karthe	Germany, male	2016	2024	United Nations University, Institute for Integrated Management of Material Fluxes and of Resources, Dresden, Germany. Email: karthe@unu.edu	co-organize publications over the next 4 years
Vice Chair	Prof. Dr. Liliana Zaharia	Romania, female	2016	2024	University of Bucharest, Faculty of Geography 1 Nicolae Balcescu Blv., 010041, Bucharest, Romania, Tel: + 40-21-305 38 22, Fax: + 40-21-315 30 74, zaharialil@yahoo.com ; zaharialili@hotmail.com	outreach activities, reporting, archiving, membership recruitment
Member	Prof. Dr. Danijel Orešić	Croatia, male	2020	2028	University of Zagreb, Department of Geography, Marulićev trg 19/II, 10 000 Zagreb, Hrvatska (Croatia), doresic@geog.pmf.hr	Collaboration + outreach
Member	Dr. Lanhui Zhang	China, female	2016	2024	Lanzhou University, College of Earth Environmental Sciences, Guanyun Building 0912, Tianshuinan Road 222, Lanzhou City, zip code: 730000, Gansu Province , China, Tel/Fax:010 931 8912805 lh Zhang@lzu.edu.cn	Proposed: Publications + reporting
Member	Prof. Dr. Heejun Chang	USA, male	2020	2028	Portland State University, Geography, 1721 SW Broadway, PO Box 751, Tel. 503-725-3162, Fax: 503-725-3166; changh@pdx.edu	Book publication, collaborative research, outreach, mentoring.
Member	Dr. Marcela Hebe Gonzalez	Argentina, female	2020	2028	University of Buenos Aires, Department of Atmospheric and Ocean Science – CIMA CONICET. Intendente Güiraldes 2160 2nd floor Building II Ciudad Universitaria C1428EGA CABA ARGENTINA Tel 54-11-52858472 int. 58472, marcelahebe@gmail.com , gonzalez@cima.fcen.uba.ar	Collaboration + proposed publications
Advisory member	Prof. Dr. Natalia Frolova	Russia, female	2020	2024	Lomonossov State University, Moscow, Department of Hydrology, Faculty of Geography, GSP-1, 119991, Leninskie Gory, MSU. Phone: +7 (495) 939-15-33 frolova_nl@mail.ru	non-executive advisor
Advisory member	Prof. Dr. Chan-sheng He	USA, male	2012	2024	Western Michigan University. Wood Hall, Department of Geography, Western Michigan University, 3234 Wood Hall, Kalamazoo, MI 49008-5424. Phone: (269) 387-3425 Fax: (269) 387-3442 chansheng.he@wmich.edu	non-executive advisor
Honorary Member	Prof. emer. Tony Jones	UK, male	2002	open ended	Institute of Geography and Earth Sciences, University of Wales, Aberystwyth. tonyandienjones@btinternet.com	non-executive advisor

b. Member base of the Commission

The research profiles of all members are displayed on the Commission's website (<https://igu-water.org/2018/05/14/members/>). In total our 56 members (39% female) represent the following 22 countries: Argentina, Armenia, Austria, China, Croatia, Eswatini (Swaziland), Germany, India, Italy, Japan, Mongolia, Nigeria, Norway, Portugal, Romania, Russia, South Africa, Spain, Turkey, United

Kingdom, USA, Zimbabwe.

As identified previously, it will be a continued focus of the Commission to further grow the proportion of *young* scientists among members. Promising examples over the past four years include the attraction of doctoral students or young post-docs from Romania, South Africa, China and Russia to name but a few.

Also, the policy of attracting female scientists and researchers with a non-natural science background as well as practitioners from relevant water sectors will further be pursued. Member from countries facing water scarcity (such as the Middle East, Northern/ Southern Africa for example) are specifically targeted.

Means of attracting members include word of mouth by current members as perhaps most important way, actively inviting identified colleagues to meetings of the Commission, advertising the work of the Commission on the website, providing support in research grant and travel applications etc. In addition, a review of listed members regarding the stipulated 2-year-non-activity rule is to be conducted to avoid accumulating non-active members as happened in the past.

C. Meetings

Owing to Covid-19-related travel restrictions none of the planned physical meetings took place. The IGC in Istanbul was postponed to 2021 as was the 4th Conference on World's Large Rivers in Moscow both originally scheduled for August 2020.

D. Networking

a. Collaboration with other IGU Commission

None in reporting period

b. Collaboration with high-level international organisations

- UNESCO:

Mining impacts on water and health in Africa

World's Large Rivers Conference

- WHO-IARC:

Zupunski L, Street R, Mathee A, Winde F, Ostroumova E, Nkosi V., Schüz J (2020): Exposure to heavy metals from gold mine tailings in South Africa: health risks and research challenges. In: Society for Environmental Geochemistry and Health, International online conference; SEGHS Live, June 29-30, 2020, Abstract for oral presentation

- IAEA

Winde F (2020): Extracting uranium from mine waste – perspectives on the South African situation. Oral presentation, IAEA: International conference on management of naturally occurring radioactive material (NORM) in industry, 19-30 October 2020, Virtual event. Virtual workshop: Uranium and other metal resources in mining and milling wastes – towards circular material use. Panellist

Gerstmann B, Fairclough M, Lottermoser BG, Winde F (2020): Witwatersrand gold tailings: opportunities and constraints of uranium recovery. In: IAEA [ed.]: Uranium in Mine Waste: A Problem with an Opportunity. TECDOC SERIES, WEF 200713, Chapter 5, pp. 16

IAEA Technical Meeting of the Uranium Mining and Remediation Exchange Group (UMREG), 7–9 October 2019, Chemnitz, Germany, hosted by German Government

c. Collaboration with ISC and CIPSH¹

None in reporting period

¹ It is somewhat unclear why these two science bodies are singled out, Feedback as to the underlying motivation is appreciated.

D. Publications

a. Newsletters and reports

- The annual newsletter has been circulated via e-mail and the Commissions website
- A Quadrennial Research Report for the period 2016-2020 has been submitted to IGU
- A Research Plan for the period 2020-2024 has been submitted to IGU
- 1 x an extended response to a request for feedback on the Quebec conference 2018

b. Special editions

- *Geography Environment Sustainability* (2020): "Special Issue "Water sustainability at global, regional and national levels", 13 (2), <https://ges.rgo.ru/jour/issue/view/49>

Guest editors:

Prof. Natalia Frolova, Lomonosov Moscow State University, Russia

Prof. Frank Winde, North-West University, South Africa

Prof. Chansheng He, Western Michigan University, USA

Prof. Liliana Zaharia, University of Bucharest, Romania

Dr. Maria Kireeva, Lomonosov Moscow State University, Russia

Papers by members include:

Winde F (2020). Turning Water Pollution Sources Into Assets: Exploring Innovative Options Of Using Abandoned Mines For Generating And Storing Renewable Energy. *Geography, Environment, Sustainability*, 13 (2), 6-16, <https://DOI-10.24057/2071-9388-2020-03>

Ioana-Toroimac G., Liliana Zaharia, Gianina Neculau, Gabriel Minea (2020): Impact Of Channel Incision On Floods: A Case Study In The South-Eastern Subcarpathians (Romania), *Geography, Environment, Sustainability*, 13 (2), 17-24

Magritsky DV, Natalia L. Frolova, Olga M. Pakhomova (2020): Potential Hydrological Restrictions on Water Use in the Basins of Rivers Flowing into Russian Arctic Seas. *Geography, Environment, Sustainability*, 13 (2), 25-34

Kireeva MB., Ekaterina P. Rets, Natalya L. Frolova, Timothy E. Samsonov, Elena S. Povalishnikova, Andrey L. Entin, Ivan N. Durmanov, Alexander M. Ivanov (2020): Occasional Floods On The Rivers Of Russian Plain In The 20Th –21St Centuries. *Geography, Environment, Sustainability*, 13 (2), 84-95

E. Archival contributions

News and information on conferences including photos, programmes as well as reports, newsletters etc. are archived at the website of the Commission (www.igu-water.org). Herewith permission is granted to download to IGU archives what is deemed relevant.

F. Productive Use of previous IGU grant

Travel grant applications of two members from resource-limited countries for attending the IGC in Istanbul have been actively supported by the Commission Chair through motivational letters to the LOC in Istanbul. However, owing to the postponement of the congress this support did not yet materialise.

G. Joint projects and activities²

a. Focal areas of future SC work

In support of newly appointed members of the SC a number of focal areas have been highlighted for their future work:

- assisting with organising meetings, especially our own non-IGU events,
- initiating, coordinating and leading joint publications in special issues etc.,

² This section is added by us since it does not form part of the template provided by IGU. As we deem this aspect an important part of our work as a Commission we propose to make it a standard reporting point to IGU.

- assisting with reviewing abstracts and chairing sessions relating for/at our meetings,
- recruiting new members and introducing students to the Commission incl. attendance of meetings if funds allow.

As newly appointed member of the SC Prof. Heejun Chang proposed the following portfolio for his work at the SC:

1. Meetings: Organizing sessions at non-IGU meetings (e.g., AAG, AGU), reviewing abstracts and chairing sessions at those meetings.
2. Publications: Initiating a joint publication book on SDG 6 - Clean Water and Sanitation (how land use affect water demand and clean water supply) - an initial conversation going on with Springer
3. Collaborative Research: Compile and develop transdisciplinary water research ideas based on the commission interest and societal needs - a working group or task force can be formed with a regular meeting - bi-monthly or quarterly?
4. Membership: Mentoring early career scholars in another country (Ph.D. students and an early career scholar who obtained a PhD in the last 5 years)
5. Outreach: create a database or an interactive website for the IGU commission members. Who is studying where and on what topic. I think we might want to initiate a google drive for the commission so that people can have access to those folders.

b. Textbook on Hydrogeography

Proposed by Prof. Karthe this project is currently still under discussion.

c. Springer book on Physical Geography

Prof. Beckedahl invited members to contribute to a Springer book on Physical Geography he is editing. This invitation received several positive responses in the meantime incl. from Prof. emer. Tony Jones as founding father of the Commission. Work on the publication is in progress.

d. Session on Water Security at AAG Meeting 2021

The Commission agreed to the proposal of Prof. Chang to support the Session "Extreme events, urbanization and water security: Case studies from Global south and north" at the Conference of the Association of American Geographers (AAG) in spring 2021 covering the following topics (as circulated to members).

1. Impacts of extreme events (COVID-19, wildfires, floods) on water infrastructure and use
2. Effects of urbanization on socio-spatial dimensions of water demand and provision
3. Relationship between urbanization and water quality in major world cities
4. Urban political ecology approaches to water infrastructure and drinking water quality
5. Water security as a human right for all city residents
6. Mitigation and adaptation strategies for enhancing resilience in urban water resources

The session is organised by Profs. H. Chang (Portland State University) and W. Jepson (Texas A&M University). Corresponding to the North-South aspect of the theme the session is co-organised by Dr. Marcela Gonzales from Argentina, who was also recently appointed to the Steering Committee.

e. Flood separation algorithm

Initiated by Dr. M. Kireeva (Moscow State University) members were invited to use their own data for testing an electronic flood hydrograph separating algorithm developed by her and her colleagues. This project idea is still awaiting implementation.

f. Global ground truthing of satellite data on soil moisture

Based on a presentation of prof. He at our annual meeting in Bucharest 2019 the chair's proposal to invite members for applying the presented ground truthing method to data sets elsewhere in order to increase the robustness and geographical applicability of data converting algorithm was accepted. However, the idea has not yet been implemented.

g. Tentative ideas for future projects

In bilateral discussion with SC members prof. Winde proposed a range of ideas for possible future joint projects of the Commission to be discussed further:

- Compiling a spatially represented database on research projects of Commission members using Google Earth or other-free-of-charge virtual geographic environments including a short project description, linked papers, photos etc. - perhaps with some access restriction on raw data if some feel the need for it
- Conducting a gap analysis of literature and projects on water sustainability to identify topical and geographical niche areas for the Commission.
- Create an archive of open source papers and presentations by members on the website including teaching material on core concepts etc. to develop into a real resource for students worldwide, specifically in low-income countries
- Compile a list of ideas with potential collaboration projects among Commission members