

International Association of Hydrogeologists
COMMISSION ON GROUNDWATER & CLIMATE CHANGE
ANNUAL REPORT 2016

Chairs

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IAH-CGCC website: <http://www.gwclim.org>

1. IAH-CGCC Aims (2012-2015) – renewed in 2015

The mission of the IAH Commission on Groundwater and Climate Change (IAH-CGCC) is: **to improve understanding of (1) the relationship between groundwater and climate change, and (2) the role of groundwater in adaptation to climate variability and change.**

The IAH-CGCC will seek to fulfil its mission by:

1. promoting related research and development to advance scientific and technical knowledge;
2. fostering inter-disciplinary, international collaborations with research institutions, water resource managers, and water policy makers;
3. fostering linkages with related research and development activities in climate, hydrological, agricultural and health sciences;
4. engaging with key international organisations, agencies and programmes (*e.g.* UNESCO-IHP, WMO, FAO, UNICEF, WHO, IAEA-WRP, GEWEX, GWSP)
5. working with the International Groundwater Resources Assessment Centre (IGRAC) to promote the development of a programme and facility for the collection, evaluation, archiving and sharing of groundwater data including both ground-based observations and satellite measurements;
6. identifying and evaluating a series of representative case studies illustrating the relationship between groundwater and climate change and the role of groundwater in adaptation to climate variability and change;
7. disseminating research and development outcomes to the global research community including specifically the IPCC, and global development community including governmental and non-governmental organisations and those specifically concerned with enabling adaptation to climate change; and
8. creating awareness of the IAH-CGCC among IAH members, related professions and wider water resources and water supply communities.

2. Progress on IAH-CGCC objectives during 2016 through:

2.1 Educational Initiatives

2016, 12-16 Dec **AGU Fall meeting (San Francisco, USA)**
Four young researchers in the category of PhD/Post doc/ECR (Early Career Researchers) were supported by the INQUA IFG funding project 1616F, led by IAH-CGCC Co-Chair Jianyao Chen.

2.2 Contributions to special sessions at international conferences

2016, 26 Sept **43rd IAH Congress Meeting** (Montpellier, France)
The IAH Commission on Groundwater & Climate Change (IAH-CGCC) met at the 43rd Congress and discussed several key issues pertaining to the work of the IAH-CGCC including: **networking** - who is doing what in the field of research and practice evaluating the relationships between groundwater and climate change including both impacts and adaptations by compiling a list names of Commission members and their expertise by online survey; **access to literature** - both peer-reviewed publications behind firewalls and difficult-to-access grey literature reports in currently limited circulation – expand list of accessible databases on the website and provide a service of posting literature provided by commission members; and **experience sharing** - learn from other members about their works and activities (*e.g.* Josep Mas-Pla's work in Catalonia) and providing links to existing webpages and literature sources under the listed commission members' names.

2016, 29 Sept **GEWEX: Including Water Management in Large Scale Models**
Convened by the Global Land/Atmosphere System Study Panel (GLASS) and the GEWEX Hydroclimatology Panel (GHP), the IAH-CGCC through work conducted under The Chronicles Consortium delivered a keynote presentation by IAH-CGCC Co-Chair Taylor, *Large-scale modelling of groundwater resources: Insight from a comparison of model data and in-situ observations*.

2016, 12-16 Dec **AGU Fall meeting (San Francisco, USA)**
IAH-CGCC Co-Chair Chen co-convened session H43M, *Climate variability and change and subsurface hydrology: Impacts, Mitigating Measures, and Predictions*. Palaeogroundwater meeting also organized at San Francisco State University with Jason Gurdak (UNESCO-IHP GRAPHIC).

2.3 Knowledge Exchange

- The IAH-CGCC has contributed to an outreach publication seeking to create awareness and policy-relevant implications of groundwater and global change under the IAH Strategic Overview Series: *Global Change and Groundwater* (p. 6)
- The IAH-CGCC by way of *The Chronicles Consortium* is leading a special section of papers for publication in *Hydrogeology Journal* under the heading/focus, *Observed Storage Changes in African Aquifers and their Implications for Sustainable Water Resources Management* (<http://www.un-igrac.org/news/call-papers-special-issue-hydrogeology-journal>)

2.4 Engagement with international programmes and scientific agenda:

(i) INQUA and IGCP

- IAH-CGCC Co-chair Jianyao Chen serves also as INQUA IFG Palaeogroundwater leader, and Co-PI of IGCP 618 project (2012-2016), which enables the close communication between INQUA, IGCP and the IAH.

(ii) UNESCO-IHP GRAPHIC Programme

- The IAH-CGCC continues to work closely with the GRAPHIC programme including the development of conference sessions and workshops.

(iii) GEWEX Project

- The IAH-CGCC is currently leading a large network of researchers in an inter-comparison of modelled and *in-situ* observations of groundwater recharge in Africa under *The Chronicles Consortium* forming a new contribution to the Global Energy and Water cycle Exchanges (GEWEX) project.

3. Future Plans and Meetings

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| 2017, May | JpGU/AGU Joint Meeting 2017 (Tokyo, Japan)
At a session, <i>Sustainable global groundwater management for human security</i> , the IAH-CGCC through work conducted under <i>The Chronicles Consortium</i> will deliver a keynote presentation, <i>Large-scale modelling of groundwater resources: insight from a comparison of model data and in-situ observations in Sub-Saharan Africa</i> . |
| 2017, Sept | IAH 44th Congress (Dubronvik)
The IAH-CGCC is holding a meeting at the 44 th Congress that is open to all IAH Members. |
| 2017, Oct | Groundwater age and its association with sustainability (Guangzhou, China)
IAH-CGCC Chen will Co-Chair a training course on groundwater dating in China. |

2017, Dec

AGU Fall meeting (New Orleans)

IAH-CGCC is co-chairing a session (Session ID 24216): *Regional Groundwater Availability and Sustainability Studies: Advances, Methods and Approaches for a Complex, Changing World.*

Richard Taylor, Bridget Scanlon & Jianyao Chen
IAH-CGCC Co-Chairs