



**INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS  
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE**

## **The IUGG Electronic Journal**

**Volume 20 No. 11 (1 November 2020)**

This monthly newsletter is intended to keep IUGG Members and individual scientists informed about the activities of the Union, its Associations and interdisciplinary bodies, and the actions of the IUGG Secretariat, Bureau, and Executive Committee. Past issues are posted on the IUGG [website](#). E-Journals may be forwarded to those who will benefit from the information. Your comments are welcome.

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### **1. IUGG – The People at the Forefront (XIII)**

#### **Zuheir Altamimi, President of the International Association of Geodesy (IAG), 2019-2023**



*June 2018, at the inauguration of the new ITRF  
Core site at Ny-Ålesund, Svalbard, Norway.  
Credit: Bjørn-Owe Holmberg.*

I was born in Al-Karak, a small city in Jordan known for its Crusader castle, the Kerak Castle. The family Altamimi is split in two parts: one living in Jordan (where my father was also born) and the other in Hebron, Palestine, where my mother lived until her marriage. I grew up in Tafilah, another small city, midway between Al-Karak and the well-known Nabatean city, Petra, some 230 kilometres to the south of Amman, the capital of Jordan.

I left Jordan at the age of 18, to study in France what we call today “geomatics sciences”, including geodesy, of course, a science that I started to know, love and learn at the engineering school of Institut géographique national (IGN-France): the “Ecole Nationale des Sciences Géographiques (ENSG)”.

Once in France, I had French classes for one year and then two years of mathematics and physics before I joined the ENSG in 1980. There, I was very lucky to have excellent professors in geomatics in general, but in geodesy in particular. I graduated from ENSG three years later, with a Master’s degree, and went back to Jordan for about one year, but returned to France in late 1984, attracted by the mystery of geodesy that I wanted to pursue deeper. In January 1985, I was also fortunate to meet my PhD advisor Claude Boucher, who served as the IAG Secretary General during the period 1991-1995. Claude proposed for my thesis work the subject: “Combination of space geodetic techniques for the realization and maintenance of a terrestrial reference system”. So I got down to work, using a suite of software packages and tools developed by Claude and his team at that time, and ended up by building and publishing the first combined Terrestrial Reference Frame using space geodesy data [Boucher and Altamimi, 1985]<sup>1</sup>, known as BTS84 (for Bureau International de l’Heure Terrestrial System 1984). This achievement earned me my first trip to the United States, to attend, together with Claude, my first international conference, on Earth Rotation and Reference Frames, which was hosted by Professor Ivan Mueller (whom I had the privilege to meet for the first time, and who became IAG President during 1987-1991), at the Ohio State University. I also met with eminent geodesists, and many PhD students who have since become my international colleagues.

I received my PhD degree in 1990 from the Paris Observatory, and then continued to work with Claude in the development of the International Terrestrial Reference Frame (ITRF). After he left in 2005, I inherited responsibility for the ITRF Center at IGN-France, as part of our contribution to the activities of the International Earth Rotation and Reference Systems Service (IERS).

In 1995, I started to develop the CATREF software (Combination and Analysis of Terrestrial Reference Frames) for the purpose of not only the ITRF analysis and computation, but also for analysis of time series of station positions, velocities and Earth Orientation Parameters, using full variance covariance information. CATREF has evolved since then to include many other features and in particular the modelling of periodic signals that we see in the time series of station positions. I was (and am) pleased to share CATREF with others, and so have organised CATREF training courses for international participants at geodetic institutes and universities around the world.

In 2006, I received my Habilitation degree (2<sup>nd</sup> doctorate) in Space Geodesy, from the Paris University VI, and became Research Director at IGN-France. I enjoyed working with, and supervising, PhD students, several of them as part of the research group on terrestrial reference systems and ITRF that I am leading. I am fortunate to have around me well qualified and smart scientists forming the “ITRF group” at IGN, which is now integrated into the Institut de Physique de Globe de Paris (IPGP).

Since the first days of my geodetic career, I was attracted by the activities of our International Association of Geodesy (IAG), and joined a number of Study and Working Groups, and served as: President of Sub-commission 1.3 (Regional Reference Frames) 2003-2007, President of Commission 1 (Reference Frames) 2007-2011, IAG Vice-President 2015-2019, and now IAG President 2019-2023.

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<sup>1</sup> Boucher, C., and Z. Altamimi (1985), Towards an improved realization of the BIH terrestrial frame, in Proceedings of the International Conference on Earth Rotation and Reference Frames, MERIT/COTES Rep., vol. 2, edited by I. I. Mueller, 551 pp., Ohio State Univ., Columbus, OH.

During my career, devoted mainly to ITRF activities, I have had (and still have) the privilege to interact with many scientists and colleagues around the world. In particular colleagues who are working hard for the IAG Services and continuously providing input data for the ITRF determination. The IAG fundamental products are based on a global geodetic infrastructure that originally was developed to support a mix of research activities, but which is now in danger of degradation and is not sustainable in the long-term, due mainly to budgetary restrictions, but also due to the public ignorance of the essential contribution of Geodesy to society. Not being the owner of the geodetic infrastructure - funded by national mapping agencies, space agencies, universities and research laboratories - the IAG must therefore rely on, and interact with international initiatives aimed at ensuring the long-term sustainability of the geodetic infrastructure. As a consequence of this situation, beside my scientific and IAG activities, I am, together with other international colleagues, deeply involved since 2003 in the United Nations "UN-GGIM" initiative on Global Geospatial Information Management, where geodesy, and in particular the development of the Global Geodetic Reference Frame (GGRF) is one of the key areas of work of the Committee of Experts of UN-GGIM. The intensive activities of the GGRF Working Group, now elevated to a "Subcommittee on Geodesy", led to the adoption in 2015 by the UN General Assembly of a [resolution](#) on the "global geodetic reference frame for sustainable development".



*August 2015, New York, at the United Nations, with Peni Suveinakama (Fiji UN mission), left, and Gary Johnston (Geoscience Australia), right.*

*Credit: Anne Jørgensen, Norwegian Mapping Authority.*

The UN-GGIM GGRF initiative is an opportunity that the IAG should not miss, to enhance global cooperation among UN Member States, in coordination with our Association, in order to sustain the geodetic infrastructure and to stimulate research to improve the accuracy and availability of our geodetic products. As no one single country can provide all the geodetic products that are fundamental to society, the establishment of an intergovernmental mechanism, and the creation of a Global Geodetic Center of Excellence (GGCE), has become the preferred means of ensuring the sustainability of global geodesy. At its 10<sup>th</sup> Session, the UN-GGIM Committee of Experts welcomed the offer by the Federal Government of Germany to host the office of the GGCE at the UN Campus in Bonn. The IAG will then be a vital actor in defining the work program of the GGCE.

For the remainder of my term as IAG President (until 2023), and beyond, I will continue advocating the importance of geodesy for science and society, but also support and work with all initiatives aimed at sustaining our global infrastructure on which all our fundamental geodetic products are built.

During my career I have been fortunate to benefit from supporting relationships and fruitful scientific exchanges with many friends and colleagues and should be acknowledged here but are too numerous to cite individually. They will recognise themselves if they get a chance to read these few lines of my life.

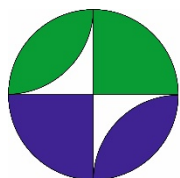
A special Thank You goes to the successive IGN Directors for their continuous support and understanding of the importance of global geodesy and the ITRF.

## 2. IUGG Yearbook 2021 – in preparation

Corrections and updates to the information contained in the [IUGG Yearbook](#) for 2021 are now being finalised. Please contact the [IUGG Secretariat](#) by **15 November 2020** with additions and corrections.

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## 3. IAPSO – Early Career Scientist Medals - Call for nominations



IUGG



International Association  
for the Physical Sciences of the Oceans

I would like to kindly invite you to consider sending us your nominations for the recipients of the IAPSO Early Career Scientist Medals for the year 2021.

This award honours Early Career Scientists for their outstanding research in the physical or chemical sciences of the oceans, and for their cooperation in international research. The IAPSO Early Career Scientist Medals, one for physical ocean science and one for chemical ocean science are presented by the IAPSO President, every two years, at the biannual IAPSO Assembly, where the Awardees are expected to give a talk on a scientific topic of their choice. Financial assistance to attend the Assembly will be available.

Due to the Covid-19 pandemic the IACS-IAMAS-IAPSO Joint Assembly scheduled for Busan, Republic of Korea, in 2021 has been cancelled; the next assembly will be the IUGG General Assembly 2023, Berlin, Germany. However, we are currently investigating the possibility of holding online talks in 2021.

Further information on the [procedure and requirements for nomination](#), and the [timeline for the 2021 awards](#).

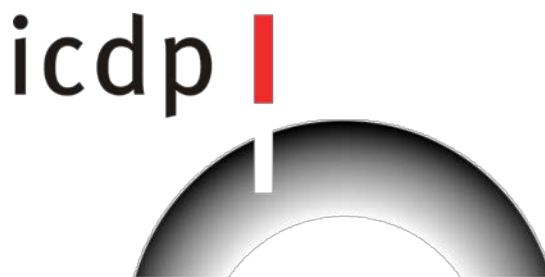
The nomination package should be submitted to the IAPSO Secretary General, [Dr Stefania Sparnocchia](#) by **15 January 2021**. Late submissions will not be considered.

Trevor J. McDougall, IAPSO President

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## 4. ICDP Science Plan 2020-2030

“Billions of Years of Earth Evolution” is the overarching motto for the brand-new Science Plan of the International Continental Scientific Drilling Program (ICDP). This Science Plan outlines the scientific challenges to be addressed by continental scientific drilling for the coming decade and bundles them in four key topics: Geodynamic Processes, Geohazards, Georesources, and Environmental Change.



Within these areas, future ICDP projects will tackle scientific questions related to important aspects of the evolution of planet Earth (thermal evolution, tectonics, magnetic field, atmosphere, oceans, and life), past climates and the effects of large impacts and mass extinctions, the formation and wise

utilization of our most significant resources, and in-situ monitoring of volcanoes and fault zones. These key themes are directly linked to wider societal challenges related to clean water and sanitation, affordable and clean energy, sustainable cities and communities, mitigation of natural hazards, and climate action.

The science plan was developed in close cooperation with our offshore sibling, the International Ocean Discovery Program, IODP. Jointly with IODP, ICDP aims to boost the successful cooperation by implementing the new Land To Sea Drilling (L2S) initiative for projects that require combined onshore and offshore scientific drilling to fully address outstanding scientific challenges and operational goals.

We kindly invite you to discover our Science Plan and to start brainstorming about new drilling initiatives and to spread the word on ICDP in your science networks. Download and see the Science Plan and an introductory video [here](#).

ICDP Team

*ICDP was founded in 1996 as a result of the German Continental Deep Drilling Program (KTB; 1987-1995), the International Lithosphere Program (ILP) – a joint program of IUGG and the International Union of Geological Sciences (IUGS) – and others. The GFZ German Research Centre for Geosciences serves as the headquarters for the current ICDP program and its Operational Support Group.*

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## 5. CODATA – IUGG Ambassador to the DRUM initiative



Dr. Justin Mabie from NOAA/CIRES, USA, will serve as the IUGG Ambassador to the Digital Representation of Units of Measure (DRUM) initiative of the ISC Committee on Data (CODATA).

The current state of the digital representation of units of measure (DRUM) across domains is a significant problem relative to the interoperability of data and it needs to be addressed immediately.

Across the scientific disciplines there is a wide variety of knowledge about, focus on, and care with the recording of a unit of measure with each piece of experimental, calculated, modeled or derived data. Much information is available for annotation of units for humans, however there is no authoritative source for how to represent and store units of measures (in any units' system) in digital systems. This is a fundamental problem for data science currently and a major problem for the future integration of large, heterogeneous datasets both within and across disciplines. It is the most important single issue for the development of general or domain repositories, for the ideas behind Big Data and Open Data and the implementation of systems that support Findable, Accessible, Interoperable, and Reusable (FAIR) data. The DRUM initiative should address these issues.

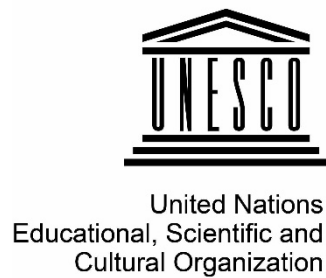
More information about the DRUM initiative can be found [here](#).

Anatoly Soloviev, IUGG Liaison Officer to CODATA

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## 6. UNESCO-IOC – United Nations Decade of Ocean Science for Sustainable Development (2021–2030) – Call for Decade Actions (No. 01/2020)

Please can I ask that you all consider the following message from the UNESCO Intergovernmental Oceanographic Commission (UNESCO-IOC) and disseminate to interested parties in your associations. This is a great opportunity for some cross disciplinary work, enabling perhaps otherwise not thought of ideas and programmes. Obviously IAPSO scientists will play a major role and would be happy to hear from other scientists.



Intergovernmental  
Oceanographic  
Commission

Via this first "[Call for Decade Actions](#)", IOC Member States and partners (incl. IUGG and its sub-entities) are invited to request endorsement under the Ocean Decade for transformative Decade Actions that contribute to the [Ocean Decade](#) vision. Interested parties should complete and submit the relevant online "[Request for Endorsement](#)" before **15 January 2021**. Decisions on endorsement under this Call will be made in the first quarter of 2021.

The vision of the United Nations Decade of Ocean Science for Sustainable Development is "the science we need for the ocean we want". To achieve the Ocean Decade vision, a wide range of partners will implement endorsed Decade Actions in the form of programmes, projects or activities over the next ten years.

Proponents of endorsed Decade Actions will have the opportunity to join a highly visible, shared, global effort that builds on decades of achievement in ocean science. There will be opportunities to create new collaborations across disciplines, geographies and generations, as well as opportunities to access new sources of support.

This Call for Decade Actions is the first of series that will be launched as part of the Ocean Decade and it focuses specifically on:

- i. large-scale, multi-country, transformative Decade programmes; and
- ii. large-scale contributions of in-kind or financial resources for Decade Actions or coordination costs.

Programmes or contributions that will enhance the sustainability of ocean science, including infrastructure or individual or institutional capacity, in light of the COVID-19 pandemic are welcome in response to this call. Actions in any part of the world are welcome, and there is no limitation on who can submit a request for endorsement. Actions do not need to have funding secured before submission.

A suite of documents, that can be downloaded at the bottom of this page, provides additional information on the Call including:

- Guidance Note for Applicants
- Frequently Asked Questions on the Call for Decade Actions
- Summary of the Implementation Plan

If you are not yet ready to submit a full request, you can also register your initial ideas via this form and you will have the opportunity to let others working on similar issues know that you are interested in identifying new partners for your proposed Decade Action.

A virtual session is planned to provide additional information on the Call for Decade Actions on **6 November 2020** between 06:00 and 07:30 UTC. You can register [here](#) for the session.

During the preparation of submissions we strongly encourage interested parties to consult and, where possible, collaborate with other institutions and partners working on common issues. Parties wishing to connect with other actors working in their geographic or thematic area of interest can download details of interested parties that are seeking collaborators, contact the [IOC Secretariat](#) or contact members of the [Ocean Decade Executive Planning Group](#).

Denise Smythe-Wright, IUGG Liaison Officer to UNESCO-IOC

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## 7. ILP Awards: Call for Nominations



INTERNATIONAL  
LITHOSPHERE  
PROGRAM

### *Evgueni Burov Medal*

In honour of Evgueni Burov, the International Lithosphere Program (ILP) established a medal recognising pioneering contributions by mid-career scientists. The aim of the Evgueni Burov Medal is to promote high class solid Earth science in combination with community service. The Evgueni Burov Medalist will be honoured with a dedicated event during the [EGU General Assembly 2021](#).

### *Flinn-Hart Award*

The Flinn-Hart Award is presented by the ILP Bureau to an outstanding young scientist for contributions to the solid earth sciences covered by ILP. It consists of a travel grant and a citation, and aims to encourage the participation of promising young scientists in the Program.

The nomination guidelines and more information can be found [here](#).

All proposals must be received by the [ILP Secretariat](#) before **15 December 2020**.

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## 8. IUGS – New Leadership 2020-2024

Results of the online voting taken on 29 October 2020:

President: John Ludden (United Kingdom)  
Secretary General: Stan Finney (USA)  
Treasurer: Hiroshi Kitazato (Japan)  
Vice-President: Hassina Mouri (South Africa)  
Vice-President: Daekyo Cheong (Rep. of Korea)

More information incl. the results of the election for Councillors for the periods 2020-2024 and 2022-2026 will be posted soon on the [IUGS website](#).

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## 9. ISC – Learn more about ISC



### International Science Council

The ISC is facilitating a welcome session for those new to the ISC, to learn about its work and the ongoing opportunities for participation and collaboration for ISC members (which includes IUGG).

The virtual session over Zoom is also a chance for you to ask questions and to provide feedback to the ISC on its communication and engagement with members. All staff members and office bearers working within organizations that are part of the ISC membership are invited to participate.

If you're interested in attending the discussion, please register for the date and time that is convenient for you. ISC looks forward very much to e-meeting you, and to an open discussion.

[Register](#) for the virtual discussion on **25 November 2020**, 09:00 – 10:30 CET.

[Register](#) for the virtual discussion on **26 November 2020**, 16:00 – 17:30 CET.

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## 10. ISC – Call for Expressions of Interest to Host a Regional Presence for the ISC Global Secretariat

On 12 October 2020, the International Science Council (ISC) launched a global [Call for Expressions of Interest to Host a Regional Presence of the ISC Global Secretariat](#). The call is specifically addressed to its members in Africa, Latin America and the Caribbean, and Asia and the Pacific.

Following several consultations with members in these regions, including virtual meetings, online surveys, and bilateral conversations, and taking into consideration the comments, feedback and proposals received, the ISC Governing Board has developed a [Strategy: Towards a future regional presence for the ISC](#). Its aim is to establish and support future ISC regional structures in order to build a globally distributed and coordinated ISC Secretariat, which should be fully operational by January 2022.

Deadlines for the submission of expressions of interests are the following:

- **10 December 2020** for Africa
- **10 December 2020** for Latin America and the Caribbean
- **15 May 2021** for Asia and the Pacific

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## 11. Awards and Honours

### *American Geophysical Union (AGU)*

AGU announced its [Section Awardees and Named Lecturers](#) who will be honoured for their sustained and unique contributions to advancing our understanding of Earth, its atmosphere and oceans, and planets and astral bodies beyond our own. They will receive their honours at the [2020 AGU Fall Meeting](#). Among the 2020 Section Awardees and Named Lecturers are the following scientists who have been active in IUGG: **Giuliano Di Baldassarre** (Sweden), Chair of the IAHS Panta Rhei Working Group (2018-2019), was named the Paul A. Witherspoon Lecturer; **Augusto Neri** (Italy), Member of the Union Commission on Mathematical Geophysics (CMG; 2008-2012), was awarded



the Gilbert F. White Distinguished Award and Lecture; *Malcolm Sambridge* (Australia), IASPEI Representative, Union Commission on Mathematical Geophysics (CMG), was named the Beno Gutenberg Lecturer

### *European Geosciences Union (EGU)*

EGU announced the recipients of its [Union Medals and Awards, Division Medals, and Division Outstanding Early Career Scientists Awards](#), who will be honoured for their important contributions to the Earth, planetary and space sciences. They will receive their prizes at the [2021 EGU General Assembly](#). Among the 2021 medallists are the following scientists who have been active in IUGG: *Berit Arheimer* (Sweden), President-Elect IAHS, was awarded the Henry Darcy Medal; *Giuliano Di Baldassarre* (Sweden), Chair of the IAHS Panta Rhei Working Group (2018-2019), was awarded the Plinius Medal; *Fausto Guzzetti* (Italy), President of the IUGG National Committee for Italy, was awarded the Sergey Soloviev Medal; *Christopher Jekeli* (USA), President, IAG Commission 2: Gravity Field (2004-2007), was awarded the Vening Meinesz Medal; *Malcolm Sambridge* (Australia), IASPEI Representative, Union Commission on Mathematical Geophysics (CMG), was awarded the Beno Gutenberg Medal

### *Congratulations!*

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## 12. Obituary

With great sadness IUGG reports the death of

*Hans R. Pruppacher (1930-2020)*, Honorary Member of the IAMAS International Commission on Clouds and Precipitation (ICCP). An obituary can be found [here](#).

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## 13. Meetings affected by COVID-19

### *IAHS*

The IAHS sponsored [4th International Conference of the Great Rivers of Africa](#) planned to be held in Cotonou, Benin, from 24 to 28 November 2020, has been postponed to 16 to 24 November 2021, to be held in the same place.

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## 14. Meeting calendar

Meetings are subject to change due to the COVID-19 pandemic.

### *November*

- 2-6, GEO, Online, [GEO Week 2020](#)
- 9-13, ICTP, IUGG, Trieste, Italy, [Impact and Risk Relevant Climate Information from Global Scale Projections to Local Scale Climate Hazards](#)
- 16-19, WMO, Online, [WMO Data Conference – Earth System Data Exchange in the 21<sup>st</sup> century](#)
- 16-20, IAGA, URSI, Online, [9th VERSIM Workshop – VLF/ELF Remote Sensing of Ionospheres & Magnetospheres](#)

- 30 - 4 December, CODATA, Online, [International FAIR Convergence Symposium and CODATA General Assembly](#)
- 30 - 4 December, ISPRS, Sydney, Australia, and Online, [Climate Change and Disaster Management - Technology and Resilience in a Troubled World](#)

### ***December***

- 1-17, AGU, Online, [AGU Fall Meeting 2020](#)

### ***January 2021***

- 28-4 February, COSPAR, Sydney, Australia, [43rd COSPAR Scientific Assembly](#)

### ***Association Scientific Assemblies 2021-2022***

- 28 June – 2 July 2021, Montpellier, France, [IAHS Scientific Assembly](#)
- 28 June – 5 July 2021, Beijing, China, IAG Scientific Assembly
- 22-27 August 2021, Hyderabad, India, [IAGA-IASPEI Joint Scientific Assembly](#)
- 20-24 January 2022, Rotorua, New Zealand, [IAVCEI Scientific Assembly](#)
  
- 18-23 July 2021, Cancelled, [IACS-IAMAS-IAPSO Joint Scientific Assembly](#)

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