



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

## **The IUGG Electronic Journal**

**Volume 21 No. 2 (1 February 2021)**

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 to be involved in ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management**



The IUGG is pleased to announce the initiation of the [ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management](#) (FG-AI4NDM). The focus group is building a community of experts and stakeholders to explore current practices (and untapped potential) in the use of AI to support:

- data (collection/monitoring, handling),
- modelling (reconstructing, forecasting, and projecting), and
- communication (early warning systems, etc.) of natural disasters.

All scientists under the umbrella of the IUGG are welcome to participate! Please [join](#) the (low volume) **mailing list** and mark your calendar for the following events:

**15-17 March 2021:** opening workshop and meeting of FG-AI4NDM. The one-day workshop (10:00-14:00 CET) will highlight exciting activities in this domain. The IUGG Union Commission on Geophysical Risk and Sustainability (GRC) has been invited to propose a speaker for the workshop. In the subsequent meeting 10:00-14:00 CET, both days), practical aspects of the focus group will be discussed and first use cases (i.e., natural disaster types) will be selected. To propose a use case, please visit the FG-AI4NDM website for the document template (which includes instructions). Please note that the deadline to submit proposals and register for the event is **2 March 2021**. If you have any issues joining the mailing list or registering for the workshop/meeting, please contact the focus group [secretariat](#).

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## 2. New IUGG Liaison Officers to CCTF and WDS

On 24 December 2020, following the recommendation of the IUGG Executive Committee, the IUGG Council appointed:

(i) **Dr. Felix Perosanz** (France) as the new Alternate IUGG Liaison Officer to the Consultative Committee for Time and

Frequency (CCTF) for the period 2021-2023 as the successor for Dr. Gérard Petit (France). This step was necessary because Dr. Petit recently took over other responsibilities at CCTF and therefore was no longer eligible to act as IUGG Liaison Officer. Dr. Perosanz is well known in the IAG and the geodetic community. Since 1996, he has been working at the French Space Agency (CNES), and: (ii) **Dr. Kirsten Elger** (Germany) as a new Alternate IUGG Liaison Officer to the ISC World Data System (WDS) for the period 2021-2023 as the successor for Dr. Carey E. Noll (USA). This step was necessary because Dr. Noll recently retired. Dr. Elger is head of the research data repository GFZ Data Services, the domain repository for the geosciences, hosted by the GFZ German Research Centre for Geosciences in Potsdam, Germany. Dr. Elger is well known for her contributions to the IAG Services ICGEM, IGETS, and ISG.

Bureau  
International des  
Poids et  
Mesures



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## 3. IASPEI Medal 2021 – Call for Nominations



IUGG



International Association of Seismology  
and Physics of the Earth's Interior

IASPEI

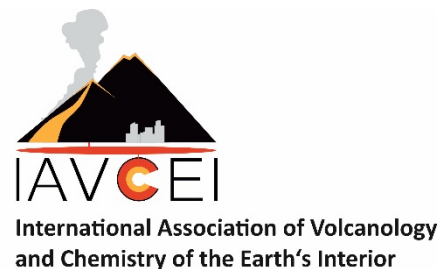
The [IASPEI Medal](#) is awarded for merit in seismology: for sustaining IASPEI goals and activities, and for scientific merit in the field of seismology and physics of the Earth's interior. The IASPEI Bureau is responsible for whom, among the candidates nominated at large, will be the medal recipient. To this date the IASPEI

Medal has been awarded to Robin Adams (2013), Willie H. K. Lee (2015), Bob Engdahl (2017), and Brian L. N. Kennett (2019). Nominations for candidates for the IASPEI Medal 2021 are due on **28 February 2021**.

Please submit the nominations together with a letter of support and a CV of the candidate to [Johannes Schweitzer](#), IASPEI Secretary General.

#### 4. IAVCEI Launches New Website

IAVCEI is pleased to inform that its reshaped, more professional and more user-friendly website will be launched on 2 February 2021. The address will remain the same: <https://www.iavceivolcano.org/>



#### 5. ILP - New Task Forces and Coordinating Committees



INTERNATIONAL  
LITHOSPHERE  
PROGRAM

The International Lithosphere Program ([ILP](#)) celebrated its 40 years anniversary in 2020. The lithosphere is the connection between deep Earth and the surface, and ILP was formed in 1980 by the International Union of Scientific Unions (ICSU; today the International Science Council, ISC) with the

objective of:

- promoting interdisciplinary research on the lithosphere,
- at the interface between IUGS and IUGG, and
- through multidisciplinary research projects.

ILP is a bottom-up organisation that takes initiatives to bring together individuals and organisations in Task Forces and Regional Committees, selected solely on the basis of scientific quality and societal needs. A key feature is their dynamic nature and focus on bringing in new talent. The activities are organised in four thematic subjects:

- Geoscience of Global Change
- Contemporary Dynamics and Deep Processes
- Continental Lithosphere
- Oceanic Lithosphere

ILP has just initiated ten new dedicated Task Forces and Coordinating Committees for the period of 2021-2025 on the following topics.

Task Forces (TF):

- Deformation and Magmatic Processes from the Lithosphere to the Surface: Integrated Multidisciplinary Approaches
- Global Lithospheric Stress - The World Stress Map in 3D
- Continental Lithosphere: a Broad-scale Investigation (CoLiBrI)
- LithoMar - Assessing the Relationships Between Lithospheric Processes and Seafloor Topography at Oceanic Hotspots and Divergent Margins
- Sedimentary Basins
- Bio-Geodynamics of the Lithosphere

Coordinating Committees (CC):

- TOPO-EUROPE: 4D Topography Evolution in Europe: Uplift, Subsidence and Sea Level Rise
- Anatolian Tectonics (ANATEC)
- Global Geo Transects (GGT)
- Lithosphere of East Antarctica

while two recent initiatives will continue for the period of 2020-2024:

- Lithosphere Structure, Mineral Resources (TF)
- Lithospheric Seismicity and Tectonics in the Himalaya (CC)

This broad coverage of lithosphere research includes researchers from all over the world, and we are pleased that the group of PIs include an increasing number of early career scientists. Interested scientists are invited to participate in the ILP research program.

ILP is now 40 years old, but it is as vivid and active as ever!

Hans Thybo, ILP President

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## 6. UNESCO-IOC Launches the Global Ocean Science Report 2020

In its 60th Anniversary Year, the UNESCO Intergovernmental Oceanographic Commission (IOC) launched the Global Ocean Science Report 2020 ([GOSR2020](#)). GOSR2020 offers a global record of how, where and by whom ocean science is conducted, charting ocean science capacity for sustainable development. The report is a resource for policymakers, academics and other stakeholders seeking to assess progress towards the Sustainable Development Goals (SDG) of the UN 2030 Agenda, in particular, the [SDG target 14.a](#) on scientific knowledge, research capacity and transfer of marine technology.



United Nations  
Educational, Scientific and  
Cultural Organization



Intergovernmental  
Oceanographic  
Commission

The findings of GOSR2020 are based on primary data provided by IOC's member states. The report shows the status and the trends in ocean science. It analyses the workforce, infrastructures, equipment, funding, investments, publications, data flow and exchange policies, as well as national strategies. It also monitors our capacity to understand the ocean and seize new opportunities.

Key findings from the report state:

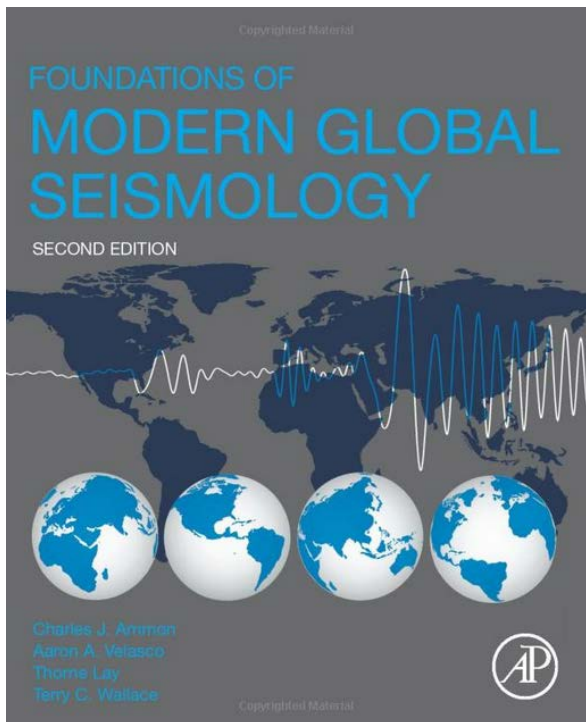
- Ocean science funding is largely inadequate, undermining the ability of ocean science to support sustainable provisions of ocean ecosystem services to humanity.
- Ocean science continues to underrepresent women, particularly in highly technical categories.
- The technical capacity of ocean science remains unequally distributed among countries and regions.
- Ocean data and information are inadequately supported, which hampers open access and data sharing.
- Ocean research has direct implications on sustainable development policies, management strategies and action plans of multiple societal structures.

The GOSR2020 process offers a systemic approach to measure ocean science capacity internationally in line with SDG target 14.a.

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

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## 7. Publication – Foundations of Modern Global Seismology (2nd Edition)



### **Description**

*Foundations of Modern Global Seismology, Second Edition* (by Charles Ammon, Aaron Velasco, Thorne Lay, and Terry Wallace, Elsevier, 2020), is a complete, self-contained primer on seismology, featuring extensive coverage of all related aspects - from observational data through prediction - and emphasizing the fundamental theories and physics governing seismic waves, both natural and anthropogenic. Based on thoroughly class-tested material, the text provides a unique perspective on Earth's large-scale internal structure and dynamic processes, particularly earthquake sources, and the application of theory to the dynamic processes of the earth's upper layer. This insightful new edition is designed for accessibility and comprehension for graduate students entering the field.

Exploration seismologists will also find it an invaluable resource on topics such as elastic-wave propagation, seismic instrumentation, and seismogram analysis.

### **Key Features**

- Includes more than 400 illustrations, from both recent and traditional research articles, to help readers visualize mathematical relationships, as well as boxed features to explain advanced topics
- Offers incisive treatments of seismic waves, waveform evaluation and modeling, and seismotectonics, as well as quantitative treatments of earthquake source mechanics and numerous examples of modern broadband seismic recordings
- Covers current seismic instruments and networks and demonstrates modern waveform inversion methods
- Includes extensive, updated references for further reading new to this edition
- Features reorganized chapters split into two sections, beginning with introductory content such as tectonics and seismogram analysis, and moving on to more advanced topics, including seismic wave excitation and propagation, multivariable and vector calculus, and tensor approaches
- Completely updated references and figures to bring the text up to date Includes all-new sections on recent advancements and to enhance examples and understanding Split into shorter chapters to allow more flexibility for instructors and easier access for researchers, and includes exercises

### **Readership**

Researchers, upper-division undergraduate and first-year graduate students in earth science, geophysics, geology, seismology, and applied mathematics/mechanics



## 8. Awards and Honours

### *American Meteorological Society (AMS)*

At its 2021 Annual Meeting in January 2021, the AMS honoured its [2021 Awardees](#). Among the 2021 Awardees are the following scientists who have been active in IUGG: **Joyce E. Penner** (USA), IAMAS President (2019-2023), received the Syukuro Manabe Climate Research Award *for scientific leadership in merging atmospheric aerosols and their chemistry with climate models to understand the breadth of human activities driving climate change*; and **Soroosh Sorooshian** (USA), IUGG Fellow (2019), received the Hydrologic Science Medal *for ingenious, groundbreaking work on surface hydrology and the remote sensing of precipitation that has profoundly impacted the field of hydrometeorology*.

### *Royal Astronomical Society (RAS)*

At the Ordinary Meeting of the Society held on 8 January 2021, the RMS announced the [2021 winners of its medals and prizes](#), awarded to scientists around the world for significant achievement in the fields of astronomy and geophysics.

The Society's highest honour is its Gold Medal, which can be awarded for any reason but usually recognises lifetime achievement. Past winners include Albert Einstein, Edwin Hubble, Arthur Eddington and Stephen Hawking. It was first awarded in 1824; since 1964 two have been awarded each year: one for astronomy, and one for geophysics.

This year the winner of the Gold Medal (for geophysics) is Professor [Thorne Lay](#) (USA), IASPEI President and Member of the IUGG Executive Committee (2015-2019), of the University of California Santa Cruz.

The citation states:

*“Distinguished Professor Thorne Lay (University of California, Santa Cruz) receives the Gold medal in recognition of his outstanding work in seismological analysis, beginning with his discovery of a discontinuity a few hundred kilometres above the core-mantle boundary, which has had an exceptional impact on our perceptions of the structure and dynamics of the Earth. In parallel research he has provided new insights into the rupture processes of the world’s most devastating earthquakes and the generation of tsunamis.”*

### ***Congratulations!***

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## 9. Obituaries

With great sadness IUGG reports the death of

**Paul J. Crutzen (1933-2021)**, a recognised world leader in atmospheric sciences, Nobel Laureate in Chemistry (1995), Director of the Max Planck Institute for Chemistry (1980-2000), and Honorary Member of the International Ozone Commission of IAMAS. An obituary can be found [here](#).

**Peter S. Eagleson (1928-2021)**, a recognised world leader in hydrology, President of the American Geophysical Union (1986-1988), Member of the IAHS/UNESCO Panel on Hydrological Education (1989-1990), and recipient of the IAHS 1991 International Hydrology Prize. An obituary can be found [here](#).

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## 10. Meeting Calendar

### February

- 1-5, ISC, Online, [Extraordinary General Assembly of the International Science Council](#)
- 9-12, IAG, Online, [Australian Earth Sciences Convention – ‘Core to Cosmos’](#)

### March

- 20-26, IASC, Online, [Arctic Science Summit Week 2021](#)
- 22-26, IAGA, Online, [VIII SBGEA & VIII SimFAST Joint Symposium](#)
- 29-31, IAG, Online, [1st ICCG Workshop on Geodesy for Climate Research](#)

### April

- 19-30, EGU, Online, [EGU General Assembly 2021](#)

### Association Scientific Assemblies 2021/2022

- 27 June - 2 July 2021, IAG, Online and Beijing, China, [IAG Scientific Assembly](#)
- 19-23 July 2021, IACS, IAMAS, IAPSO, Online, [Seminar Series](#) (replaces the IACS-IAMAS-IAPSO Joint Scientific Assembly planned to be held in Busan, Rep. of Korea, from 18-23 July)
- 21-27 August 2021, IAGA, IASPEI, Online and Hyderabad, India, [IAGA-IASPEI Joint Scientific Assembly](#)
- 20-24 January 2022, IAVCEI, Rotorua, New Zealand, [IAVCEI Scientific Assembly](#)
- 30 May - 3 June 2022, IAHS, Montpellier, France, [IAHS Scientific Assembly](#)

The full IUGG Events Calendar 2021 can be found [here](#).

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