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Geomagnetism, Paleomagnetism and Electromagnetism

Message from the President

I am pleased to present the 2024 year in review, the Fluxline Newsletter. One of the highlights of 2024 was to award the first GPE early career Nagata Award, named after the prominent Japanese geomagnetist Takeshi Nagata. In 2024 GPE also changed the criteria for the William Gilbert award which will now be an open award each year with no age restrictions. GPE has no shortage of excellent candidates for these awards, and I encourage you to nominate your peers.

It has been a pleasure to serve as GPE president, and president elect for the last 4 years. AGU has been through numerous changes in this time and now faces tough challenges. Steven Constable will be an excellent president and is well equipped to handle the new challenges and hopefully see GPE grow in the next few years. And welcome to Julie Bowles as president elect.

GPE 2024 Highlights from AGU24

The AGU24 Annual Meeting was branded as: "What is Next for Science". It was a pleasure to return to Washington D.C. where we enjoyed many good sessions

sponsored, or co-sponsored by GPE. An overview of the meeting highlights is given below.

Edward Bullard Lecture

The 2024 Edward Bullard Lecture was given by **Professor Yongxin Pan** from the Institute of Geology and Geophysics, Chinese Academy of Sciences (CAS) Beijing, China. His excellent lecture titled: **The Possible Role of Geomagnetic Field in Biosphere** was very well received. He presented state of the art imaging and rock magnetic techniques for the study of biogeomagnetism and the influence of the geomagnetic field on the biosphere. Prof. Pan is engaged in the research of rock magnetism, paleomagnetism, biogeomagnetism, planetary magnetism, and planetary habitability, especially, leading the research realm of biogeomagnetism in China.



Image: Professor Yongxin Pan on the right with GPE President Suzanne McEnroe

Dr. Pan received his Bachelor's and Master's degrees in geology at China University of Geosciences, and Ph.D in geophysics at Institute of Geology and

Geophysics, Chinese Academy of Sciences. In 2017 he was elected an academician of Chinese Academy of Sciences. He is currently Project Scientist of China's First Mars Exploration Mission (Tianwen-1), Co-Chief Scientist of the Macau Scientific Satellite-1 (MSS-1), chair of Chinese Paleomagnetism Commission, P.I. of the Basic Science Project of National Natural Science Foundation of China. He is editor-in-chief of the Chinese Journal of Geophysics, and editor-in-chief of Earth and Planetary Physics.

The Edward Bullard Lectures are archived by AGU and are available for future viewing. AGU has updated member pages and the link for the 2024 lecture is on Professor Pan's AGU webpage. The video is under the Honors and awards tab. [The link is here.](#)

William Gilbert Award

Professor Christopher Davis, from the School of Earth and Environment, University of Leeds, UK, was the 2024 recipient of the GPE section **William Gilbert Award** for his outstanding and unselfish contributions to our understanding of the structure and dynamics of Earth's core.



Congratulations Chris!



Image: Professor Christopher Davies on the right with GPE President Suzanne McEnroe

Takesi Nagata Early Career Award

This award recognizes an early-career scientists for exceptional work in the fields of electromagnetism, geomagnetism, paleomagnetism, rock magnetism or new cross-disciplinary research areas and methods.

The inaugural Takesi Nagata award was given to **Dr. Richard Bono** from the Department of Earth, Ocean, and Atmospheric Science, Florida State University, USA for fundamental work advancing our understanding of Earth's past magnetic field and its relationship to inner core growth.



Image: Doctor Richard Bono on the right with GPE President Suzanne McEnroe

Professor Lisa Tauxe was awarded the 2024 AGU Fleming Medal. This medal is awarded for outstanding scientific contributions in the fields of magnetism and palaeomagnetism. Congratulations Lisa!

Professor Mioara Manda was elected to the AGU College of Fellows. Mioara is a member of both the Study of Earth's Deep Interior section and GPE. Congratulations Mioara! This was well deserved and long overdue.

The GPE Section Outstanding Student Presentation Award (OSPA)

At the section award session we acknowledged the OSPA awardees

Shaoting Feng, Abstract title: The Electrical Structures Revealed by Magnetotelluric Data Near the Littoral Fault Zone of South China Sea

Nastaran Ahanin, Abstract title: Unveiling the Ordovician Superchron and Paleogeography of the Baltica Palecontinent: New Insights from Paleomagnetic Data from Central Sweden

Katie Bristol, Abstract title: Assessing Eruptive Hiatus Durations of the Deccan

Congratulations to OSPA winners Nastaran, Katie and Shaoting

2024 GPE Postdoctoral Grant Recipients

The GPE Post-doc Grant aims to support postdoctoral scholars attending AGU by covering the cost of registration for the meeting. This support is made possible by the generous sponsorship from Applied Physics (formally 2G Enterprises), AGICO, and GPE member donations. I would like to extend a heartfelt thanks to all our financial donors, AGICO, and Applied Physics Systems, and GPE members. GPE uses these donations to support our early career members, through the early career mixer, student travel, presentation awards, and postdoctoral meeting registration.

2024 Postdoctoral Recipients

Dr. Pengfei Xue, Tongji University, China.

Abstract Title: Spatiotemporal distribution of giant magnetofossils holds clues to their biological origin

Dr. Tinghong Zhou, University of Rochester, USA

Abstract Title: Geodynamo Renewal at the Ediacaran–Cambrian Boundary: Evidence from the Chatham-Grenville Syenite Stock, Eastern Canada

Dr. Jonathan Stine, University of Minnesota, USA

Abstract Title: The Effects of Marine Redox Variability on Magnetic Mineralogy: An Environmental Magnetic Study of late Miocene Sediments from IODP Expedition 401, Site U1385

Yiming Zhang, University of California, Berkeley, USA

Abstract Title: Enhancing site-based apparent polar wander paths with Bayesian stratigraphic age models

In 2024 this award was only given to applicants with a GPE **primary section affiliation**. Going forward the requirement for **GPE Primary section affiliation** will continue to be eligible for this GPE award.

The GPE Student and Early Career Reception

The GPE Student and Early Career reception was well attended this year. The evening provided a wonderful opportunity for networking and relaxing. Everyone enjoyed the evening. Plenty of food and drinks were available. We thank our early career representative, Dr. Claire Nicols, and our student representative, Rashida Doctor, for organizing this event. Funding for the event is provided by AGU and through our member donations to the GPE section.

AGU24 GPE Section Business Meeting and Reception on 10 December

The annual business section meeting was very well attended, and by the time we convened the business meeting the room was full of activity. It was wonderful to see so many of our colleagues in person and have the opportunity to greet members from around the world. This year our business meeting was shorter than previous years allowing us more time to socialize and network. Earlier in the day our section awards were presented in a new format. The awards were presented as part of the GPE awards and Edward Bullard Lecture session. This new format was well received and will continue in the future. The format provides a more formal setting for the presentation of our section awards.

GPE Member News

Paul Bedrosian (USGS) has stepped down after serving 2 terms as GPE Secretary. Paul did a fantastic job soliciting and organizing GPE section sessions for the fall meetings for the last 8 years and serving as OPSA coordinator for GPE amongst other duties on the GPE executive committee. We greatly appreciated all the time and work Paul gave to GPE. Thank you, Paul, for your dedication and service to AGU! Paul will be replaced by **Maggie Avery**, also of USGS.

Claire Nichols (Oxford University, UK) rotated off her role as GPEs Early Career representative. Claire was responsible for organizing the GPE early career and student reception in addition to serving on the GPE executive committee. Thank you, Claire, for your dedication and service to AGU! Claire will be replaced by **Courtney Wagner**, Kent State University.

Membership

In the past we have noticed that student members do not always choose an AGU section to be affiliated with when joining AGU. Please encourage your students to join GPE. Affiliation has many benefits from networking to eligibility for GPE awards.

Give to GPE

The [AGU Section Incentive Program](#) provides unrestricted funding to sections based on the number of qualified individual donations of \$50 or more (per individual) to any AGU fund by the group's primarily affiliated members. Most years more than 5% of GPE members donate, unlocking the matching contribution from AGU, but last year we didn't reach that threshold. Let's change that: make a gift and support the GPE section today!

AGU Fellows Program

The number of primary members in a section determines the number of Fellow nominations we can put forward in a given year. Member numbers are determined at the end of the year (December 31). AGU requires 700 members for 2 nominee allocations. Below 700 primary GPE members only one fellow nomination may be put forward. This has been a very difficult situation for GPE because we have many outstanding candidates to put forward. GPE membership continues to decline and we need to grow. Please encourage your students and any GPE related colleague to [join AGU](#), and choose the GPE as their primary when joining AGU.

2024-2025 GPE Committees

Executive: Suzanne A. McEnroe (Past President) Steven Constable (President) Julie Bowles (President-elect) Maggie Avery (Secretary) Ankit Barik (Social Media & Web Editor) Courtney Wagner (Early Career Rep.) Rashida Doctor (Student Rep.) **Fellows and Awards Committee:** Julie Bowles (chair), Ken Kodama, Gary Egbert. Annual Meeting Program Committee Maggie Avery. Canvassing Committee: Suzanne McEnroe (chair), Steven Constable, France Lagoix.

If there are issues you would like to put forward to the GPE committee, or council please send a message to Steve Constable (2025 President), or Suzanne McEnroe (2025 Past president).

We are very grateful to our 2024 canvassing committee for supporting nominators and for seeking out nominees for honors and recognition. AGU offers many opportunities for recognizing our peers at all stages of careers from the Union level Fellowship at AGU, The Fleming Medal, the Macelwane Medal and the Joanne Simpson Medal and at the section level, Gilbert award, Nagata Early Career Award, Bullard Lecture, GPE post-doc grants, AGU student grants and OSPA awards. During the year any suggestions for these awards can be made to the GPE Canvassing committee. This committee is also available to provide support and guidance for nominations.

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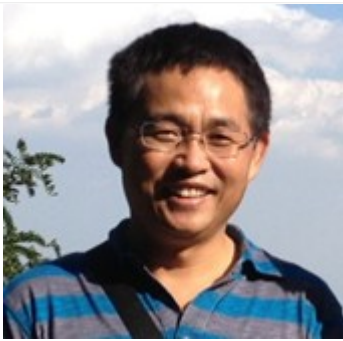
Connect with peers, gain insights, and develop a personalized action plan to advance your career. Join any time before the live event to explore resources.

[Learn more.](#)

In Memoriam

The GPE section sends its most sincere condolences to all of the families, friends and colleagues that have lost loved, respected, and admired ones in 2024.

Shihong Zhang died unexpectedly after returning to China from AGU24. Shihong's research spanned many topics, including a recurring theme of tectonic synthesis, especially the paleomagnetism of distinct crustal blocks and intervening orogenic belts across China, but always with respect for stratigraphy, structural geology, and geophysics. The timescales of his investigations covered most of Earth's accessible history: Mesozoic accretion in Tibet and northeast China, and reconstruction of North and South China cratons in Paleozoic Gondwanaland, as well as the older Proterozoic supercontinents Rodinia and Nuna. Among other accolades, his scientific contributions and community spirit were honored by Fellowship of the Geological Society of America.



AGU is a global community supporting more than half a million advocates and professionals in the Earth and space sciences.



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