



U.S. Permafrost Association

2024 Annual Report

December 31, 2024



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**U.S. Permafrost
Association**
PO Box 750141
Fairbanks, AK 99775
<https://uspermafrost.org>

Dear USPA colleagues and friends:

2024 was a year of changes, achievements, and challenges. As we conclude 2024, we want to thank you for your support of the U.S. Permafrost Association (USPA).

USPA continued our mission in advancing permafrost science and engineering, growing and serving the memberships, providing permafrost education, serving the cold regions engineering industry, and strengthening international collaborations. The USPA organized 8 webinars (from Oct 2023 to Nov 2024) with 666 participants and 72 PDH certificates issued. USPA awarded 13 grants for a total of \$10,500; we rolled out the Family Care Program and gave the first two Caregiver Awards (\$500 each). 2024 was the first year of awarding the Erv Long Memorial Award (\$3,000). The USPA is establishing the Ronnie Daanen Scholarship and will rely on donations to maintain the Scholarship and continue Ronnie's legacy. 2024 was also the first year to publish the bimonthly fun-reading Thawing Ground Newsletters. USPA's members attended the 12th International Conference on Permafrost (ICOP) and its representatives attended the International Permafrost Association (IPA) meeting at ICOP.

The challenge, as well as an opportunity, of USPA is to serve a broader community and make bigger impact. We continue to rely on our USPA members to meet this challenge.

We thank the services and contributions of Drs. Anna Wagner, Kevin Schaefer, and Jessica Ernakovich, who had completed their terms on the BOD. We thank all the BOD members who volunteer their time and energy and all the USPA members for making the Association stronger. Moving on to 2025, we look forward to the leaderships of Dr. Eva Stephani as USPA President and Dr. Jon O'Donnell as President-Elect.

This report captures the main activities of the USPA and its committees in 2024.

We wish you a successful and happy 2025!

Ming Xiao
President

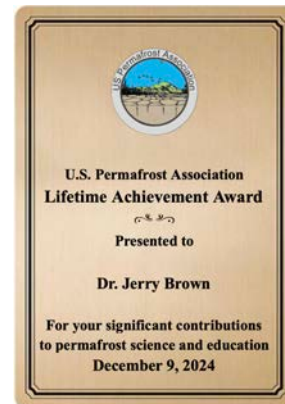
December 31, 2024

2024 USPA Annual Members Meeting

The USPA Annual Members Meeting occurred on December 9, 2024 during the AGU's Fall Meeting in Washington, D.C. Over 70 USPA members and friends attended the fun annual gathering. We thank Arctic Foundations, Inc. and Weather Stream for sponsoring the meeting.



USPA Lifetime Achievement Award: Dr. Jerry Brown was awarded the USPA Lifetime Achievement Award at the 2024 USPA Annual Meeting to honor his many scientific accomplishments and his uninterrupted service to the global permafrost community for over 60 years. He has published numerous peer-reviewed papers in , edited books and special issues of journals, and produced hundreds of conference papers and reports. He founded *Frozen Ground* and edited it for nearly two decades. He was the organizer and lead author of the *IPA Circum-Arctic Map of Permafrost and Ground-Ice Conditions*, the first large-scale map of permafrost using standardized data sets and cartographic representation. Dr. Brown was instrumental in developing the Arctic Coastal Dynamics program, the Global Terrestrial Network for Permafrost, and the Global Geocryological Database. Dr. Brown served as IPA's Secretary General and President in 2003-2008.



2024 USPA Members Annual Meeting sponsors:



USPA Committee Reports

Permafrost Engineering Education Program (PEEP)

Chair: Majid Ghayoomi; Vice Chair: Min Liew

2023-2024 USPA Technical Training Webinar Series Report

The U.S. Permafrost Association (USPA) concluded the 2024 Technical Training Webinar Series. We thank the generous financial support from the following sponsors:

- Arctic Foundations, Inc.
- Shannon & Wilson
- PND Engineers, Inc.
- Geo-Watersheds Scientific
- Beadedstream
- Katherine Schexneider

In 2023 and 2024, the USPA successfully organized eight webinars. Below is the summary of the webinars and registrations.

Webinar #	Titles	Instructors	Date	# of registrations	Countries of registration			PDH issued
					USA	Canada	Others	
1	Introduction to Permafrost	Vladimir Romanovsky	10/25/23	115	97	13	5	17
2	Geotechnical subsurface exploration in permafrost	Ming Xiao	11/15/23	63	55	8	0	5
3	Piles in Permafrost	John Thornley	02/02/24	117	95	21	1	15
4	Thermosyphons: Past, Present, and Future	Ed Yarmak	03/27/24	77	69	7	1	18
5	Thermal modeling using TEMP/W and TEMP/3D	Marc Lebeau	05/01/24	79	56	21	2	5
6	Impact of Water on Permafrost and Design of Drainage Systems for Transportation Infrastructure in Permafrost Regions	Julie Malenfant-Lepage	06/10/24	70	57	12	1	4
7	Advances in Remote Sensing of Permafrost Dynamics	Kevin Schaefer	10/09/24	81	55	16	7	8
8	Trans Alaska Pipeline Lost Creek Thermal Improvements Project	Oliver Hoopes	11/20/24	64	56	6	2	4
Total				666				72

The eight webinars were recorded; recordings are available on the USPA website (<https://www.uspermafrost.org>)¹.

Format of webinars: The webinars were offered on Zoom. Each webinar was 1 hour long, including 5-min introduction, 45-min lecture, and 10-min Q&A. Certificate of Professional Development Hours (PDH) were provided to participants who requested after each webinar. The webinars were free for USPA members.

2025 webinar plan (tentative schedule)

Webinar #	Planned schedule	Topics	Instructors
1	February	Scenarios Network for Alaska + Arctic Planning (SNAP)	Nancy Fresco
2	March	Unified Facilities Criteria (UFC) Foundations for Structures: Arctic and Subarctic Construction	John Thornley
3	April	Airborne geophysical surveys over permafrost regions	Burke Minsley
4	May	Cold regions pavement engineering	Jenny Liu
5	June	Permafrost biology	Jessica Ernakovich
6	September	Incorporating Indigenous Knowledge in Permafrost Science and Engineering	USPA DEI committee
7	October	Permafrost carbon	Christina Schaedel
8	November	Cold Regions Utilities Monograph by ASCE Cold Regions Engineering Division (CRED)	ASCE CRED

¹ Log in as a member, click “Webinar links” on the right side under the Welcome banner.

USPA-PYRN Educational Fund (UPEF)

Chair: Julian Dann

In 2024, UPEF awarded seven grants to early career members of the USPA totaling \$5000. These funds helped our members to attend the International Conference on Permafrost (ICOP) (Whitehorse, Canada), the 2024 American Geophysical Union (AGU) conference (Washington, DC), and the 2025 Toolik Steering Committee meeting (Santa Barbara). UPEF also coordinated the Andrew Slater Memorial Award and the Erv Long Memorial Award.

USPA Awards in 2024

In 2024, the USPA awarded 13 grants for a total of \$10,500.

Fall 2024:

- three UPEF Conference Travel Grants
- three PEEP Conference Travel Grants
- one Erv Long Memorial Award
- one Andrew Slater Memorial Award

Spring 2024:

- two FCP Caregiver Awards
- three UPEF Grants for ICOP in Whitehorse

ICOP Travel Grant Awardees (\$1000 each)



Ben Maglio

Presentation Title:
Thermal and hydrological
limitations on modeling
carbon dynamics at
wetland sites of discontinuous
and continuous permafrost
extent



Megan McGroarty

Presentation Title:
Permafrost Thaw Effects on
Arctic Ecosystems: Insights
from Common Substrate
Decomposition at
ACCLIMATE in Healy,
Alaska, USA



Soumitra Sakhalkar

Presentation Title:
Monitoring the small-scale
variability in seasonal
deformation on the North
Slope of Alaska, for InSAR
validation

USPA-PYRN Educational Fund (UPEF) Fall Awards (\$500 each)



Erin VanderJeugd

Conference: AGU 2024.
Presentation Title:
“The response of Arctic soils to ex-situ storm simulations”



Zena Robert

Conference: AGU 2024.
Presentation Title:
“Implications of permafrost thaw for hydrological and biogeochemical changes within thermo-erosion gully streams in interior Alaska, USA”



Samuel Bratsman

Conference: 2025 Toolik
Steering Committee
January 15-18, 2025
Santa Barbara, California.

Permafrost Engineering Education Program (PEEP) Awards (\$500 each)



Mohammad Abweny

Conference: PanAm UNSAT
2025
June 22-25, 2025
Ottawa, Canada



Yu Zhao

Conference: AGU 2024
Presentation Title:
“Mechanisms and influencing factors of gas blowout craters in warming permafrost”



Samuel Bratsman

Conference: 2025 Toolik
Steering Committee
January 15-18, 2025
Santa Barbara, California.

Andrew Slater Memorial Award (\$500)

The US permafrost community honors our colleague Andrew G. Slater (1971–2016). Andrew "Drew" Slater was land modeler extraordinaire. Drew was a force within the land modeling community. He transformed our capabilities to simulate terrestrial processes and change in cold regions. He was best known for his noteworthy advances in modeling snow, permafrost, and hydrologic processes in Arctic and mountain regions.

The winner of the 2024 Andrew Slater Memorial Award is **Emrah Ozpolat**. He presented at 2024 AGU Fall meeting. His presentation title is "Comparing the Magnitude of Hillslope and Channel Erosion in Continuous and Discontinuous Permafrost Areas in Alaska" in session *EP22B-02: Landscape Changes and Carbon Cycling in Cold Regions II Oral*

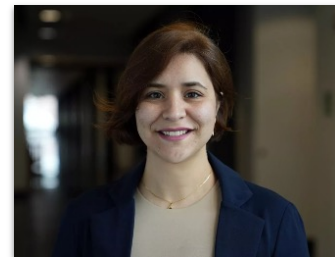


Emrah Ozpolat

Erv Long Memorial Award (\$3,000)

2024 was the first year of making the Erv Long Memorial Award! The US permafrost community honors the memory of Erwin "Erv" Long (1920–2012), a pioneering permafrost engineer with a deep understanding of the unique challenges posed by frozen ground to infrastructure. In the mid 1950s, Erv designed and prototyped the first thermosyphons in his backyard in Anchorage, Alaska to maintain frozen ground without external power. In 1972, he founded Arctic Foundations, Inc., which continues to thrive today supplying thermosyphons and innovative solutions for facilities on permafrost in Alaska and abroad. The Erv Long Memorial Award was created to honor his legacy and to support the next generation of permafrost engineers.

The winner of the 2024 Erv Long Memorial Award is **Elham Ajorlou**, Ph.D. student in the Civil and Environmental Engineering Department at the University of New Hampshire. Elham's research involves modeling the behavior of soils under seismic stress and understanding how these behaviors evolve as permafrost degrades due to rising temperatures. The award is expected to significantly enhance Elham's research by supporting her attending conferences, traveling to Alaska for data collection, and engaging in community outreach.



Elham Ajorlou

USPA DEI Committee

Chairs: Julian Dann, Shannon Dillard

In 2024, the USPA Diversity, Equity, and Inclusion (DEI) Committee continued its efforts to make the USPA a more inclusive and welcoming community by hosting training and mentorship events. The committee includes 12 active members who meet monthly over Zoom.

Events held in 2024

- Field Safety Workshop on March 20 attended by ~50 people. After the workshop, we sent out [Notes and Resources](#) to the attendees with synopses of the scenarios, best practices, lessons learned, and notes.
- Significant attendance and representation at ICOP in Whitehorse, Yukon Territories in Canada in June.
- Mentorship event over lunch at AGU on December 10th attended by 7 mentors (mid- to late-career permafrost scientists and engineers) and 21 mentees (students and early-career scientists and engineers). We created a [mentorship conversation starter](#) document with ideas for both mentors and mentees.
- Peer-to-peer mentorship discussion for early career folks at AGU on December 11th attended by 7 participants.

The DEI Committee also helped Board Member Melissa Ward Jones establish and fundraise for the Family Care Program. Many DEI committee members contributed writing and resources to a grant application from the Polar Science Early Career Community Office (PSECCO) Belonging, Accessibility, Justice, Equity, Diversity and Inclusion (BAJEDI) Micro-grant NSF Award #2135176, which we won to partially support this effort. The Family Care Program also received private donations through the USPA. The Family Care Program with support from the DEI committee held a panel discussion on Balancing Childcare and Work Responsibilities in Permafrost Research on April 11 with ~30 attendees on Zoom.

Grant reporting for the BAJEDI Micro-grant NSF Award was carried out on July 10 by Julian Dann. Shannon Dillard served on the BAJEDI Micro-grant selection committee for the 2025 funding cycle in collaboration with PSECCO.

We established a formal email account for the DEI committee at dei@uspermafrost.org. If you would like to join or participate in the DEI committee, please send us an email.



Some members of the USPA DEI Committee at ICOP in Whitehorse in June, 2024.

USPA Family Care Program (FCP)

Chair: Melissa Ward Jones



FCP Logo



FCP Awardee Jacqueline Hung
at fieldwork, Alaska.



FCP Awardee Adrian Rocha
at Fieldwork at Toolik Field Station

The USPA Family Care Program (FCP) was created in early 2024 and officially launched in April. The purpose of the FCP is to support and recognize the additional financial and logistical burdens placed upon families within the permafrost community. We believe that caregivers should not have to constantly make the hard choice between personal obligations and career success. The USPA aims to support researchers in diverse familial situations with this novel and newly launched program providing caregiver grants for all types of human care for permafrost families.

Here is an overview of 2024 activities:

- Publication announcing program, reference: Ward Jones, M. (2024). US Permafrost Association Launches Family Care Program. Witness Community Highlights. Arctic Consortium of the United States (ARCUS). Access: <https://www.arcus.org/witness-the-arctic/2024/3/highlight/1>
- Organized and conducted an online panel discussion event titled “Balancing Childcare and Work Responsibilities in Permafrost Research”. Panelists included Melissa Ward Jones (University of Alaska Fairbanks), Jessica Ernakovich (University of New Hampshire), Sarah Evans (Appalachian State University), Eva Stephani (US Geological Survey) and Liz Hoy (NASA). There were 28 registered attendees from the US and Canada, with affiliations ranging from academic institutions, US national research laboratories, engineering consulting firms, and government. The event was supported and moderated by Polar Science Early Career Community Office (PSECCO).
- Raised \$5,040 in funding to support Caregiver Awards. Donors include Arctic Foundations Inc, an anonymous donor and many individual donors. Thank you to all donors! Funding was also provided by PSECCO through an accepted BAJEDI application (NSF Award #2135176) to support two grants for early career professionals.
- The first two Caregiver Awards (\$500 each) were given in May 2024 to support summer fieldwork activities. The awardees and their testimonials are:
 - **Jacqueline Hung** (Research Scientist, Woodwell Climate Research Center): The USPA Family Care Program allowed me to continue conducting fieldwork while ensuring my personal obligations to my family were met. The FCP supported travel for my partner and 6-month-old son to Alaska, which allowed us to continue on our breastfeeding journey and alleviated dependent-care costs, while allowing me to fulfill my research goals and

commitments. In the field, I continued maintenance of two tundra eddy covariance towers measuring high-frequency carbon dioxide and methane exchange. As part of this work, I maintained and installed new sensors measuring temperature and moisture across the active layer soil profile. Additionally, I oversaw a team collecting plot-level gas fluxes, aquatic samples for biogeochemical analysis, and vegetation cover, with the goal of estimating ecosystem carbon balance from permafrost-affected environments. Having my partner travel with us helped ease any worries pertaining to my son's care as a first-time mom.

- **Adrian Rocha** (Associate Professor, University of Notre Dame): I wish to express my gratitude to the United States Permafrost Association for providing funding through the Family Care Program Caregiver Award. Funds were used to support a research trip for my 12-year-old son to Toolik Lake Long Term Ecological Research Station on the North Slope of Alaska. My son was able to experience Arctic research firsthand, while building lifelong memories with his father. During his trip, my son worked on meteorological towers that were set up before he was born and helped me with daily research activities. He also had the chance to observe wildlife and go on nature hikes in the Arctic Wildlife Refuge in the Brooks Range. This week-long trip was an incredibly rewarding bonding experience for both of us—one that we will never forget. My son is already looking forward to the next research trip with his dad. Thank you, USPA, for making this unforgettable experience possible.

Memberships

2024 was the first year that new membership dues took effect. In 2024, we had **285** individual members and **18** corporate and institutional members. We are proud that **26%** of our individual members are students, and we certainly want to increase our members in all categories. The revenue generated from member dues can be applied to travel awards for young researchers—a mainstay service for USPA—and to fund new, innovative programs such as those described above.

Our 18 corporate and institutional members contribute greatly to our fiscal status as well as offering sound collegial advice and support.

Corporate and Institutional Members of USPA

Life Member:

- Arctic Foundations, Inc.



Massive Ice Members:

- Shannon & Wilson
- University of Alaska Fairbanks, Institute of Northern Engineering
- University of Alaska Fairbanks, Geophysical Institute
- University of Colorado, National Snow and Ice Data Center
- WSP



Ice Wedge Members:

- ABR Inc.
- Alaska Ecoscience
- beadedstream
- Geo-Watershed Scientific
- University of Virginia, Dept. of Environmental Sciences
- Woodwell Climate Research Center
- Syngen



Ice Vein Members:

- PND Engineers Inc.
- Stantec
- UIC Science
- U.S. Arctic Research Commission



The Year Ahead

New BOD Members and Positions. We thank Dr. Anna Wagner, Past-President, who had generously put in so much effort and passion in USPA, and the outgoing BOD members Dr. Kevin Schaefer and Dr. Jessica Ernakovich. We thank and congratulate Katherine Schexneider who will continue to serve as Secretary for a 2nd term. We welcome Dr. Jon O'Donnell as the new President-Elect and Alena Giesche as a new BOD member. Jon and Alena bring a wealth of experience and fresh ideas. Congratulations and thanks to everyone!

2025 USPA BOD Members:

Eva Stephani, President / IPA Representative
Jon O'Donnell, President-Elect
Ming Xiao, Past-President
Katherine Schexneider, Secretary
Wendy Presler, Treasurer
Victoria Herrmann, Board Member
Vladimir Romanovsky, Board Member
Melissa Ward Jones, Board Member
Alena Giesche, Board Member

Julian Dann, PYRN Representative
John Thornley, IPA Representative
Edward Yarmak, IPA Executive Committee