

the BRIDGE

Environmental Connections Start Here

September 1, 2023 | Fall - Volume 23.3



MISSION STATEMENT

The purpose of the Pennsylvania Association of Environmental Professionals is to promote environmental education, research, planning, assessment, review, and management through the formation and operation of a nonpolitical multidisciplinary professional society.

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PAEP is a member of NAEP, the national organization for environmental professionals. Click below to view news from the national perspective.



2023 Annual Conference starts September 20th!!

You can still register to attend or sponsor. Don't miss out.

Membership Dues to Increase for 2024

At the July 10, 2023, Board Meeting, the Directors discussed the current dues structure and organization expenses. Most of us are aware that prices for goods and services have been increasing. This is true for PAEP, too. Our dues have remained level since 2016. To slow the erosion of our buying power, the Board adopted a motion to increase yearly dues beginning with 2024 as outlined below:

- General from \$65 to **\$75**
- Non-Profit/Government from \$40 to **\$50**
- Corporate from \$200 to **\$250**
- Student no change

There are no changes to membership benefits. PAEP membership presently provides for email updates from PAEP, the quarterly issues of 'the Bridge' newsletter, free webinars and access to past webinars, access to career opportunity postings, free resume posting, access to a searchable membership directory (your data can be edited by you), access to our social media platforms, inclusion in the PAEP Listserv.

This issue of the Bridge is sponsored by



ALLEGHENY BRADFORD CORPORATION

Allegany Bradford Corporation is proud to sponsor this edition of the PAEP newsletter and to support the organization's mission of protecting Pennsylvania's diverse and beautiful wild nature.

Allegany Bradford produces high-quality stainless steel equipment to serve the pharmaceutical, biotechnology, chemical, food and beverage, and cosmetic industries.

"the BRIDGE" is the newsletter of the **Pennsylvania Association of Environmental Professionals** and strives to provide its members with current, useful and unbiased information that will improve their ability to offer quality consultation and appropriate solutions to their clients. To make sure you receive these publications, be sure to **allow email from** info@paep.org to be accepted.



Welcome new members!

New Members joining us are:

Neriah Hartz - Student
Etinosa Igunbor - Student
Elizabeth Bruner - Student
Isabella Dolan - Student
Jadie Ferrell - Student
Grace Hassing - Student
Charlotte King - Student
Paige Magnelli - Student
Sam Raj - Student
Adalia Rodriguez - Student
Macy Simons - Student
Joshua Strayer - Student
Jenna Ulrich - Student
Kaylee Kim - Student
Kelly Wenzel - Student

Colleen Scott - Dewberry
Michael Ronco - Barry Isett & Assoc.
Robert Eaton - Civil & Environmental Consultants, Inc.
Cory Trego - Gannett Fleming

The PAEP Board of Directors encourages you to invite past members, non-members, and industry colleagues to join our association.

As always, we are interested in your ideas and input on providing our membership with quality, informative, timely and educational programming and opportunities. Contact the Board office with your ideas!

PAEP BOARD

Vlad Odarchenko - President
Barbara Weedon - Vice-President
Radhika deSilva - Secretary
Deb Poppel - Treasurer
Mike Parrent
Joe Musil
John R. Smith
Joe Snively
Jan Warnick

NOMINATE NOW!

PAEP Board is seeking Nominations for Directors

The new year will soon be upon us and with it will be the seating of the new Board of Directors for 2024. Three directors are up for election. One, Vlad Odarchenko, current President, is completing his final year in office. Radhika de Silva, our Secretary, is completing her last year of her first term but she is eligible to serve another consecutive term. Our third director, Joe Musil, is eligible to serve another term, as well.

We are seeking the membership to nominate individuals you would like to see on our Board. Information on the desired qualifications, nomination form and submission can be found at this link: [PAEP-2024-Self-Nomination.pdf](#).

Nominations are due by November 1, 2023.

Elections will be held via email ballot shortly thereafter. Remember...

VOTE EARLY VOTE OFTEN



Environmental Science Scholarships Awarded

The Scholarship Committee recommended candidates to the Board. The strengths of the three candidates were reviewed, with the Board agreeing with the Scholarship Committee. The three successful candidates and their awards are:

- Elizabeth Bruner, Penn State Dubois – the Gifford Pinchot Scholarship
- Alysha Ulrich, Penn State – the Maurice Goddard Scholarship
- Grace Hassing, Penn State – the Zulene Mayfield Scholarship

[Click here for information on the winners' biographies and learn about the achievements of the honored individuals who lent their names to these worthy scholarships.](#)

Our 2023 Corporate Members:

(as of September 1, 2023)

ACT Engineers

ASA Analysis & Communication

CDR | Maguire Engineering

Ernst Conservation Seeds

McCormick Taylor

Rettew

Western Section Committee

The Western Section of PAEP serves the Western portion of the State (hence, the name). It covers metropolitan areas like Pittsburgh, Erie, Monroeville and New Castle.

We are seeking inquisitive individuals to join us in learning and advancing innovative technologies in environmental care which can assist the ongoing efforts of our environmental professionals to advocate for a clean, safe environment for us all.

Contact one of the below for additional information or to contribute to this committee:

Mike Parrent (MLParrent@comcast.net),

Jan Warnick (janet.warnick3.civ@army.mil),

Joe Musil (jfmusil@msn.com) or the PAEP Business Office (info@paep.org).

Thanks for your consideration.

Photographers...

We are looking to update our photos for "the Bridge", our website, and other publications as they may arise. Pictures can be anything you feel you want to share – action, static, streams, construction, pollution, remediation, etc. If you can, please provide some background info, like, the photographer's name, Company name, date of photo, and location.

Submitted photos can be used by PAEP without compensation. The above photo credits will be included if provided. Please submit to info@paep.org.



Since we last chatted...

Check out our free webinars available to all our members, on the [PAEP website](#). They can be used to satisfy your PDHs. Not a member? You can view any of our webinars for \$25.

Past Monthly Webinars – June thru August:

- June 8 - **DRBC Who?**, presented by Kristen Bowman Kavanagh, P.E., Deputy Executive Director, DRBC
- July 18 – **Toxics Management Spreadsheet**, presentation by Maria Schumack, Environmental Engineer Manager, PADEP
- August 15 – **Susquehanna River Basin Commission: Operations and Opportunities**, presented by Andrew Dehoff, Susquehanna River Basin Commission

Looking ahead...



If you have an idea for a future webinar you would like to have offered or a type of event you'd like to attend, contact PAEP at info@paep.org.

Upcoming Webinars:

- **September** - Presentations from the Conference will be posted after the conference when they become available.
- **October** (date and topic to be announced later) – Roland Wall, Academy of Natural Science
- **November** (date and topic to be announced later) – Kathy Klein, Partnership for the Delaware Estuary

Upcoming Events:

- The **MAIN** event: **2023 PAEP Annual Conference, September 20-22**
- Central Section is working on a plant tour of a plastics recycling facility. More information will follow.

Do you have any ideas for a social outing? Here are some suggested activities: Mini-Golf Outing; Bowling; Axe-Throwing and/or Skeet-Shooting Fundraiser; Corn-Hole Tourney.

Let us know your ideas! info@paep.org



Environmental News Releases

Check out the latest articles on environmental issues:

- Significant improvements on the quest for clean energy...*see next page...*
- Plastics: contamination and recycling...*see next page...*

Links to other newsletters:

[DEP Newsroom](#) – Pennsylvania Department of Environmental Resources News Releases

[PA Environment Digest Newsletter](#)

[PennEnvironment](#)

[Pennsylvania Environmental Council](#)

[Conservation Voters of PA](#)

Types and Sources of Hydrogen

White (or **Gold**) – Naturally occurring geological H₂

Green – uses electrolysis to break the hydrogen free with the electricity being generated from a green energy source, like solar or wind (very expensive because of the cost of electrical generation)

Blue - made from natural gas using steam reforming and includes a method to capture and storage of the carbon waste generated

Orange – underground hydrogen is released by injecting a carbon dioxide-rich water solution into the appropriate geological formation. Includes a capture and store of waste components

Gray - the same process as creating Blue Hydrogen, however, no waste is collected or stored

Brown - same as Black Hydrogen

Black - generated by using coal as the source. This gasification process is the dirtiest method to extract hydrogen

Pink - created through electrolysis using nuclear-generated electricity

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"The people have a right to clean air, pure water, and to the preservation of the natural, scenic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee for these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people."
...Article 1, Section 27, Pennsylvania Constitution



Eye on the Environment

Hydrogen: the utopian panacea for a world hungry for energy?

The holy grail of the ideal energy source – one that is very abundant, environmentally clean and readily recoverable – may be within our reach. Hydrogen harvesting has been in the news as of late thanks to new finds and technological advances in making green hydrogen, blue hydrogen, orange, pink, black and gray hydrogen.

Jaques Pironon and Philippe de Donato of the Université de Lorraine, France, discovered a [large, naturally occurring reservoir of H₂ underground](#) while probing for methane gas. The available free H₂ is huge, estimated to hold 46 million tons of H₂ in this location alone! The trapped hydrogen also regenerates itself, owing to the chemical reactions occurring deep below the earth's surface. Discovered reserves around the world promise an endless supply of this energy source. Scientists project that if only 3% of these estimated reserves can be extracted from their underground repositories, that amount would satisfy the world's energy needs – even with a 500% increase in demand – [for centuries to come](#). The H₂ is in a pure usable form (white H₂) but it will take several years to work out issues of extraction, storage and distribution, as well as converting existing equipment/processes to utilize these H₂ reserves as a fuel source.

The promise of providing H₂ without the current production limitations and drawbacks could offer hope for our world, our civilizations, and needs: low-cost pollution-free production, energy for all nations and peoples, with the waste by-product of H₂O – water.

Additional reading: www.science.org; energycentral.com.

Recycling: is it a big bust?

Several articles have been written in the past few months challenging the effectiveness of our recycling efforts. These tend to focus on the large stream of unrecyclable plastics. We know there are significant issues when dealing with plastic waste. There are many types of plastics and most cannot be effectively recycled with our current technologies. At best, only 8% of all our plastics waste is recycled. Additionally, plastics can only be recycled a few times until they are chemically compromised. Microplastic particles, generated from fabrics and breakdown of large plastic items, have permeated everything – our waterways, our fauna, our flora, and even ourselves. Washing machine wastewater generates 35% of all microplastic pollution. There have been many efforts made to find reliable recycling solutions but none have been able to handle the issues at the levels we need to reach.

Read more at [5GYRES](#), [Plastic Soup Foundation](#), and [Environment Co.](#)

Plastics Pollution Solution?

For some promising news on plastic...we reported in past Bridge issues, some ultra solutions to our plastic glut. Plastic-eating bacteria have been cultured and "forever chemicals" have been broken down using safer processes. The use of recycled plastic is being researched as a binder in road pavements.

While those appear promising, several new research avenues are advancing. The University of British Columbia, Canada, has developed [a filtration device](#) that can remove 99.9% of microplastics from water. [The device](#) relies on wood dust and the unique natural polyphenols that it has in attracting microplastics. Their research paper results can be found [here](#). A new washing machine filter has been created by [CLEANR](#) that removes 90% of microplastic particles that pass through it.

[Other plastics-eating enzymes](#) have been generated which seem to be even more efficient at breaking down the plastics, taking hours instead of centuries. One of these new enzymes is dubbed [FAST-PETase](#) and has been developed by a University of Texas research team. As this develops, scientists will need to keep the enzyme from mutating into an all-plastics eating bio-machine that will satisfy its hunger on plastic things we don't want eaten.