

WINTER NEWSLETTER

December 2024



NOTE FROM THE PRESIDENT

As we approach the holiday season, I am reminded that we live in one of the most beautiful areas in the state. The towns along the Hudson celebrate the season by holding festive events and displaying seasonal decorations. It is a great place to be.

2024 for HRES was a very positive and productive year. We held our annual Leadership awards dinner in January honoring three very special and deserving individuals, awarded a McKeon Student Research grant, and held our annual symposium in October at the Cary Institute.

2025 will be a busy year as well as we hold our annual leadership awards dinner in early 2025; award our annual McKeon Student Research Grant(s), finalize the schedule on a field trip for this spring/summer period, and schedule our 2025 Symposium for the fall.

Thank you all for your continuing support and participation.
James Morrison - HRES President

HRES Membership: Our 2025 Membership renewal period is now active at

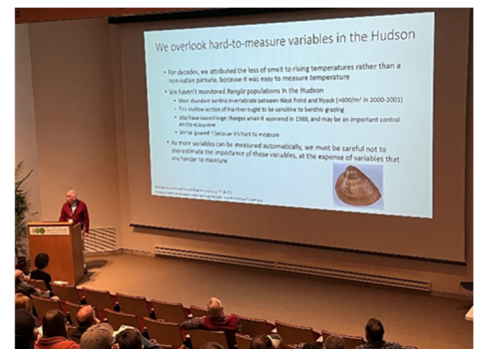
https://HRES_2025_Membership.eventbrite.com

The memberships of people who signed up at our October 2024 symposium are valid until October 2025. To avoid the Eventbrite fees, you can print out the application online at www.hres.org and mail with your check to: HRES, PO Box 279, Marlboro, New York 12542.

2024 HUDSON RIVER SYMPOSIUM: STATE OF HUDSON RIVER ECOSYSTEM MONITORING

On October 8, nearly 120 people gathered at the Cary Institute of Ecosystem Studies to hear presentations on ecological monitoring programs underway or planned for the Hudson River estuary. Ten speakers covered topics from the history of ecosystem monitoring on the Hudson to current fisheries and habitat monitoring and new applications of technologies being tested for potential future use. Here's a summary of the presentations:

- **Dr. David Strayer** (Cary Institute of Ecosystem Studies) provided a brief overview of two historical monitoring programs (the utilities Hudson River Biological Monitoring Program and the Cary Institute program) and talked about how they tracked the biological condition of the Hudson and helped us understand the workings of the ecosystem. Dr. Strayer then presented his thoughts on what factors increase the success of ecological monitoring.



Dr. David Strayer at HRES 2024 Symposium

- **Dr. Yong Chen** (SUNY at Stony Brook): discussed the biological collections and database gathered over the 50-year duration of the utilities monitoring program that was gifted to Stony Brook University and his plans to make these available to science. Several graduate students from Dr. Chen's lab presented posters showcasing the work they have done analyzing the historic database.

- **Rich Pendleton** (New York State Department of Environmental Conservation-NYSDEC) provided an overview of the intensive monitoring of diadromous fishes that is conducted annually by the NYSDEC. This long-term monitoring helps guide the management of commercial and recreational fisheries throughout the Hudson River and collectively along the coast with participation in the Atlantic States Marine Fisheries Commission.

- **Amanda Higgs** (NYSDEC) presented her work on monitoring the movement of fish in the Hudson River estuary using acoustic telemetry. These data are being used to estimate the abundance of Atlantic sturgeon (*Acipenser oxyrinchus*), their habitat use in both the Hudson and Delaware Rivers, and the development of management tools to protect the species from in-river construction activities.

- **Sarah Fernald** (NYSDEC) provided an overview of the long-term habitat monitoring of tidal wetlands and submerged aquatic habitat conducted by the Hudson River National Estuarine Research Reserve. These habitats are important for the survival of many ecologically important fish, birds, and other organisms. These habitats have been instrumental in identifying critical issues and functions and guiding key management and restoration decisions.



HRES VP Chuck Nieder and Board Member Margie Turrin Ready to Start the Symposium!

- **Brittney Flaten** (NYSDEC) discussed the need for continuous monitoring data and technological advances in environmental monitoring that gave rise to the Hudson River Environmental Conditions Observing System (HRECOS) founded in 2008. The near-time data collected by HRECOS can be used to fulfill a variety of needs: supporting place-based education, providing ancillary information to other environmental monitoring efforts, and understanding short-and long-term phenomena across the Hudson River watershed.

- **Dr. Chris Solomon** (Cary Institute of Ecosystem Studies) presented the new “interim Lower Web Monitoring Program” that is being implemented by the Cary Institute of Ecosystem Studies funded through a grant from the Hudson River Foundation (HRF). This three-year program will be established to monitor many ecosystem parameters including micro-and macro-zooplankton, phytoplankton, zoobenthos, and water chemistry. The result of this program will be used by HRF and others to help design a long-term ecosystem monitoring program on the Hudson.

- **Dr. David Lodge** (Cornell University) provided an overview of the state of the science using environmental DNA (eDNA) to determine the presence of organisms. Over the last 15 years, the applications of environmental DNA (eDNA) have exploded, especially in freshwater and marine ecosystems. The speed, accuracy, and cost of eDNA analyses has declined simultaneously with the expansion of the taxonomic breadth of detected species and types of biological inferences possible from eDNA.

- **Dr. Rebecca Cohen** (Cornell University) presented her research on using bioacoustics for ecosystem monitoring in the Hudson River. Passive acoustic monitoring offers a non-invasive and low field effort approach to track the activity of sound-producing species, which can be easily scaled for long-term and broadscale monitoring. Ongoing work is investigating Hudson River soundscapes as they relate to Atlantic Sturgeon (*Acipenser oxyrinchus*), Shortnose sturgeon (*Acipenser brevirostrum*) and river herring (*Alosa pseudoharengus*, *Alosa aestivalis*).

- **Dr. Shannon Roback** (Hudson River Keeper): discussed the Hudson Riverkeeper’s planned water quality monitoring collaborative and the creation of a data portal. Riverkeeper has been collecting water quality data since 2008 capitalizing on volunteers, academics, and community and watershed groups. Results of the program are provided to the public on the Riverkeeper website. The planned expanded program will be used to identify emerging threats, improve training of new scientists, and collect data that can be used to advocate for a cleaner Hudson River with a primary focus on Environmental Justice communities.



Panel Discussion with Martin Gary (NYSDEC), Jonathan Kramer (HRF) & Stuart Findlay (Cary)

To learn more, the presentation and poster abstracts are now available on the HRES website at www.hres.org.

INTERVIEW WITH DR. DAVID STRAYER



Dr. David L. Strayer is a freshwater ecologist whose work focuses on measuring the long-term effects of zebra mussels on the Hudson River ecosystem, and understanding the roles of suspension-feeding animals in ecosystems. Strayer also works on broader issues in freshwater conservation ecology and invasion biology.

Use code HBTS24 to save 30% on his new book "**Beyond the Sea: The Hidden Life in Lakes, Streams, and Wetlands,**" at

<https://www.press.jhu.edu/books/title/53776/beyond-sea>

HRES: What inspired you to pursue a career in the environmental sciences at the start of your professional career?

Dr. Strayer: A series of events and experiences, rather than a single defining event, led me to a career in environmental science. I grew up in a family that spent a lot of time outdoors, and like most kids I enjoyed floating sticks down streams, feeding ducks, and catching crayfish. Also, I grew up before the Clean Water Act, when water pollution was common and disturbing. Even as a child, I was bothered by the pollution that I saw, and thought that we must be able to do better. Then, when I was in high school, my biology teacher, Mr. Mabry, let a group of 4 of us study water pollution in the local river instead of dissecting a fetal pig (what a deal!). He helped us build water-sampling gear, drove all the way to the State Library to get books for us to read, and after my senior year, got me a summer job at Michigan State University's biological station. That's where I found a community of bright, interesting people who studied ecology and the environment – where I first discovered that there was such a thing as a career in environmental sciences. Then I was lucky enough in college and graduate school to encounter a series of teachers and mentors who encouraged my interest in freshwater ecology. My graduate advisor, Gene Likens, moved to the Hudson Valley to found the (Cary) Institute of Ecosystem Studies in 1983, just as I was finishing my Ph.D., and offered me a job at IES.

HRES: What were the challenges that you faced during the early days of your career?

Dr. Strayer: Learning (mostly by trial-and-error) how to do research, collaborate with and manage people, manage my time wisely, and get the grants to fund my research. These skills are all essential to a successful career in ecological research, and none was covered much in my education.

HRES: Looking back, what were the “lessons learned” that you wished you had known when you were starting out in the field of ecology?

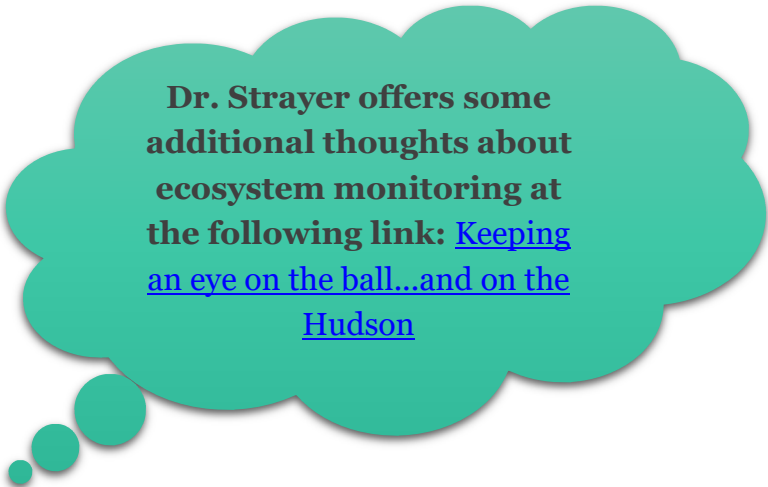
HRES: What advice do you have for students wishing to pursue a career in the environmental sciences?

Dr. Strayer: (I'm going to try to answer these 2 questions together, because they seem to me to be so closely related.) I'm not sure that I have any wise advice to give, but here are a few thoughts.

First, no matter what your exact job, it is likely that you'll be working closely with other people. Try to get good at this. Try to learn how your team works (different teams work differently), learn to listen to others and understand their needs (even if they don't think like you do), be respectful, learn when to push your own ideas and when to let them drop, deliver the things that you promise to (and on time), be generous in sharing credit, pay attention. No new ideas on this list, but they're not always easy to do, and I certainly was often unsuccessful. But if you are a good collaborator, people will seek you out, your productivity will rise, and you're likely to be happier.

Furthermore, you'll likely have some choice (though not complete freedom) in who you work with. Try to spend more time with people you work well with, and try to avoid people who are bad collaborators. Don't be afraid to reach out to people whom you'd like to work with. Some of the most satisfying experiences of my career were where I reached out (hesitatingly) to people I admired to ask them if they'd work with me on projects.

Second, try to learn how to write easily and clearly. Many (most?) jobs require regular writing of some kind, whether it is grant proposals, scientific papers, technical reports, memos, employee evaluations, policies, or just emails. If you can't write easily and clearly, you'll waste a lot of time staring at a blinking cursor, run the risk of confusing or even alienating collaborators and supervisors who struggle to understand your writing, and give people the impression that your ideas and talents are poorer than they really are. Also, writing is a good way to get thoughts and ideas straight in your own head, and weed out bad ideas. If you are just starting your career and don't already write easily and clearly, it's probably worth spending a little time getting better – it will pay off over your career. Practice helps, and there are lots of good writing guides (I like Williams' *Style: Toward Clarity and Grace*, but there are a bunch of good books).



Dr. Strayer offers some additional thoughts about ecosystem monitoring at the following link: [Keeping an eye on the ball...and on the Hudson](#)

Third, try to learn early in your career what your strengths and weaknesses are. For me, it was easier to learn my weaknesses than my strengths – by the 5th grade I knew that I wasn't going to be good enough to fulfill my dream of being a professional baseball player, and year-by-year I learned that I didn't have the skills to be a musician or a mathematician, that I wasn't great with people, and so on. But it took me until I was about 50 to see that I had some strengths that most other people didn't have. I don't know how best to do this – taking an aptitude test could be helpful, as could having perceptive and honest (but not cruel) friends. But if you can understand your strengths and weaknesses when you are young, then you can direct your education and career accordingly, and maybe even fix some of your weaknesses.

2024 MCKEON STUDENT RESEARCH GRANT



The McKeon Student Research Grant Program awards grants (up to \$1,000) to encourage high school and undergraduate college students to undertake summer projects relating to environmental research topics in the Hudson Valley. HRES is pleased to announce our 2024 McKeon grant winner: **Ekaprana Ramesh**.

Ekaprana, an undergraduate student at the Ramapo College of New Jersey, is conducting research on “Microbiome Analysis of the Hudson River Water and Potential of Bioremediation” under the direction of her faculty advisor, **Dr. Kokila Kota**. Ekaprana’s research approach is to study the metabolic activities of microbial communities in the Hudson River water by identifying their functions in bioremediation. Ekaprana’s hypothesis is that the anthropogenic pollution is a selective pressure that enriches microorganisms at polluted sites, displaying metabolic capacities that can lead to bioremediation.

Congratulations to Ekaprana for receiving this award. We look forward to seeing and hearing more from you on your project during our 2025 symposium. The HRES McKeon Research Grant program is overseen by an HRES committee led by **Secretary Lucy Johnson, PhD**.



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We need your help. Interested in volunteering your time to support the HRES mission?

Contact an HRES Board Member today!



PHOTO EVENTS FROM AROUND THE HUDSON VALLEY

After extensive rehabilitation, the Kingston-Port Ewen Bridge over the Rondout Creek reopened this fall. Our HRES member Anne Morrison braved the cold temperatures last week and submitted these photos showcasing the bridge in its holiday colors.



If you have photos of Hudson River Valley scenes that you would like us to consider for future newsletters, please email them to David.davis@hdrinc.com

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Founded in 1970, the Hudson River Environmental Society is a nonprofit, non-advocacy organization that delivers the science behind Hudson Valley issues to citizens, scientists, and decision makers. We enable objective discussions, provide forums for rigorous science, connect disparate views, and showcase the region's natural heritage. We are academic researchers, government officials, nonprofit scientists, private consultants, teachers, students, and interested residents who find real solutions.