

Within Daphnia Detectives we explore ethical engagement, pedagogical problem sets and strategic storytelling to demonstrate and celebrate the environmental research underway in an engaging and creative way. This work highlights ways in which researchers can adapt their research content, experimental designs and results in exciting ways to both showcase their research but also to involve different communities into the research process too to create lasting impact and legacy of engagement in STEM research and environmental impacts.

6.10.P-Mo423 From Community Collection to Data-Driven Insights: Mapping Riverine Plastic Litter with Plastic Pirates Belgium

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Plastic pollution is an issue of high priority for policymakers, since plastic litter accumulated in aquatic and land systems. Plastic litter is a source of contaminants of emerging concern (CECs), such as micro- and nanoplastics, and leached associated chemicals (e.g., additives, plasticizers, etc). Current local citizen science initiatives for litter collection and monitoring are popular and represent an opportunity to strengthen collaboration with the scientific community. Monitoring strategies have to rely on a multitude of surveying methodologies, since (plastic) litter is highly variable, and heterogeneously distributed in the environment, including in riverine and inland water systems. Citizen science initiatives can assist in monitoring, overcoming resource constraints (e.g., funding and personnel), facilitating sampling across extensive geographical areas, and increase awareness and environmental stewardship on plastic pollution in the local community. The goal of this work is to present the scientific and community engagement process of the project Plastic Pirates, using the Belgian use case as an example. This European project has been established in the Flemish region since 2022, and has engaged nearly 1500 school children, with many schools having a long-term involvement and monitoring the same geographical area over time. The resulting open access and FAIR data, which is validated by experts and data managers, is crucial for quantifying stranded litter and microplastics in riverine environments, assessing the origin and fate of plastic items, and resolving spatial-temporal litter accumulation trends in Belgium. In Flanders, the project contributes to other scientific projects such as TREASURE (Interreg North Sea) and INSPIRE (Horizon Europe), demonstrating the reach and utility of citizen science data in feeding into larger international research initiatives. Furthermore, the project includes supporting open access materials for schools and educators, available in multiple languages, and has synergies with local NGOs, actively contributing to scientific literacy and inclusion initiatives. By mobilizing the public in the scientific research process, Plastic Pirates supports research outcomes and community engagement in Belgium. All inputs from this initiative contribute to informing regulators and developing effective mitigation strategies related to plastic pollution.

Disclaimer/Disclosure:

This work has been funded by the Department of Economy, Science and Innovation (EWI Department) of the Flemish Government, Belgium

6.10.P-Mo424 Hazards in Risk Communication

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Science communication has changed dramatically. It used to be something scientists shared mainly with other scientists—through conference talks and articles in specialist journals. Today, the goal is broader: making research understandable for the public, policymakers, and other stakeholders. Done well, it builds trust, informs decisions, counters misinformation, encourages engagement, and supports funding. Clear goals, simple language, and adapting to the audience are key. But there's another side to the story. While most discussions highlight the benefits, the downsides are often overlooked, and these can erode trust in scientists. This presentation explores the hazards associated with cultural misunderstandings and misuse of science communication. We will present findings from a survey of EU REACH regulators on national views of hazards and risks, analyzed using the Risk Perception Attitude (RPA) framework. We'll also show examples of risk communication used for economic gain—by companies for commercial purposes or by scientists and research groups to increase the chances of their proposals being funded. The speed of online communication makes the challenge to avoid miscommunication and misuse even greater. Scientists need to work with social scientists and professional communicators to craft messages that are clear, honest about uncertainties, and sensitive to cultural differences in today's digital world.