



PONYS and SPAM: when physics crosses boundaries, "best activity award" of 2024

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The Young Minds (YM) project of the European Physical Society (EPS) has always empowered and supported three main types of activities: scientific outreach, professional development and networking. And it is to further encourage our YM sections on the organization of such activities and to recognize their good work that the YM action committee annually organizes the “best-activity award”, where sections participate with a poster presenting their major activity of the last year.



And what better time to host this competition than the annual Leadership Meeting, taking advantage of YM delegates, guest speakers, action committee members and administration being all together for the occasion. In this way, on the 25th of March 2024, during the 12th YM Leadership Meeting in Berlin at the EPS Forum, we enjoyed and learnt about the activities performed by all the different sections. In this edition, the two winning activities were both outreach-related and were organized by the sections PONYS (Physics and Optics Naples's Young Students) from Naples, Italy, and SPAM (Students of Physics And Mathematics) from Caserta, Italy. As in previous years, the contribution of EPL (Europhysics Letter) made this award possible.

The first awarded activity, by section PONYS, consisted of a two-days event

named “A scienz a for”, celebrated in October 2023 on the island of Procida, capital of Culture 2022, in Naples' gulf. Why organizing a science fair on an island? The idea was to bring science to school students and kids (from ages 6 to 18) who are less likely to participate in cultural events than their peers on the mainland. For this reason, with the collaboration of the YM section SPAM Caserta, a unique scientific experience was created, making physics a challenging game. The peculiar location itself was a key aspect. The island of Procida is part of an active volcanic area and it is mainly made of tuff. This yellow stone is widely used in construction in the whole area because of its structural properties and, moreover, it is naturally radioactive since it contains Radon. Therefore, they made use of the link between physics and their territory to carry out a laboratory experience.

Thanks to the Educational Kit and the Backpack Radiation Detector provided by CAEN company, the participants were able to measure environmental radioactivity in the area. But that was just the first day, on the second day, a real scientific “party” took place: stands about mechanics, optics and numerous scientific games for children were displayed. For instance, the game “Particle Capture the Flag” entertained the children and made them discover the fundamentals of particle physics; each participant was assigned a specific particle from the Standard Model and, to win the game, they had to remember its fundamental characteristics. The entire fair took place outdoors to further remark the link between the island's nature and physics.

The second awarded activity, by SPAM Caserta, was the event named “Sott e 'ngopp”, which is a Neapolitan expression that means “upside down”. This is the common slogan of the voluntary committee





“Comitato Città Viva” and SPAM Caserta, two groups with the objective of sharing new ways for scientific dissemination beyond the idea of elite science. With this collaboration, SPAM could participate in two events, performed in July and December 2023 in the Acquaviva district, a neglected area of Caserta characterized by a strong community identity, fundamental aspect in the organization of these kind of cultural events. During the first event, SPAM presented a tinkering laboratory with a marble machine and an inclined plane in a small

square of the district. The challenge of the marble machine was to create an obstacle course for the balls, making them slide through the machine as slowly as possible. With the inclined plane, participants built objects to slide on using different materials, observing the kinematic differences caused by various weights and shapes, and thus friction. During the second event, two interactive laboratories on mechanics and electronics were presented. The first “laboratory” consisted of constructing a car with recycled materials. The car was set in motion using the principles of propulsion on a path built to exploit the structural defects of the pavement of the square that hosted the event. For the second “laboratory”, participants were asked to answer mathematical questions; if the answer was correct, the lights of a Christmas tree were turned on by

a switch connected to a circuit. SPAM and the people who participated in the event experienced the beauty of having fun and learning together. These experiences are a clear sign that a link between science and activism is possible. In this way, science is transformed into an instrument of emancipation and equality.

The enthusiastic feedback from students, teachers and families makes these types of activities especially relevant and essential for the diffusion of culture. Science, through a hands-on approach, does not drive people away but rather makes them more curious and eager to discover more and more. Because of these two activities, we congratulate the two winners sections. We wish them another great year of activities and the best luck for the participating sections of next editions. ■



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