CITIZEN ART SCIENCE

an ecological mosquitoes eradication story

JULY 26TH 2023, 11 AM

IAC (Italian Academic Center)
Tata Innovation Center, Roosevelt Island
11 E Loop Rd, New York, NY 10044

JOINING US AT IAC YOU WILL MEET SPEAKERS FROM THE UNIVERSITY OF NAPLES FEDERICO II, THE FINE ARTS ACADEMY OF NAPLES, AND THE ITALIAN SPIN-OFF COMPANY BIOVECBLOK OF THE UNIVERSITY OF CAMERINO.

AT THE EVENT, WE WILL PRESENT THE INNOVATIVE MULTI-DISCIPLINARY APPROACH FOR ECO-FRIENDLY CONTROL OF INVASIVE MOSQUITOES, IMPLEMENTED ON THE CHARMING MEDITERRANEAN ISLAND OF PROCIDA (CAMPANIA REGION, ITALY), THE ITALIAN CULTURAL CAPITAL IN 2022.

COME AND DISCOVER HOW THE COMBINATION OF ART, SCIENCE, AND BIOTECHNOLOGY CAN LEAD TO A SUSTAINABLE APPROACH TO COMBAT DISEASE-CARRYING MOSQUITOES, WHILE ALSO STRENGTHENING AND NOURISHING THE SENSE OF BELONGING IN LOCAL COMMUNITIES!

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SCAN ME

CITIZEN ART AND SCIENCE: AN ECOLOGICAL MOSQUITOES ERADICATION STORY

Science, art, and community engagement for the eco-friendly control of invasive mosquitoes: the story of the Open Science project on the island of Procida, the Italian capital of Culture 2022

Insect-borne diseases pose a significant threat to public health and the development of any given area. Among the most concerning species is the *Aedes albopictus*, or Asian tiger mosquito, which is an invasive species vector of several viruses, including Dengue, Chikungunya, and Zika. Unfortunately, traditional methods of controlling these pests, such as insecticides, have negative impacts on the environment, biodiversity, and human health, and the absence of vaccines against mosquito-borne diseases has made the development of sustainable control practices an urgent priority, as recently highlighted by the World Health Organization.

The relationship between art and science has long been a subject of fascination, as well as tension. However, when it comes to practical applications, the divide between the two fields is much narrower, particularly in the realm of research. This convergence is at the heart of the Open Science project (OS), which was launched last year on the Italian island of Procida during its tenure as the Italian Capital of Culture for 2022 (https://www.procida2022.com/scienza-aperta). The OS project is part of the wider STOPTIGRE project, which has been ongoing on the island of Procida since 2015, with the ambitious goal of achieving an eco-sustainable eradication of *A. albopictus* through the active involvement of citizens in research and control activities using the Sterile/Incompatible Insect Technique (SIT/IIT), "green" control methods based on the release into the field of mass-reared sterile/incompatible male insects (https://stoptigre.evosexdevo.eu/en/).

The OS project brought together experts in molecular genetics, entomology, insect biotechnology, multimedia design, multimedia arts theory, new media art, digital photography, sound space design, integrated new media techniques, anthropology of complex societies, and computer graphics. By combining the efforts of scientists, artists, and citizens, the project created an innovative protocol for community engagement that focused on eco-sustainable monitoring and control of the Asian tiger mosquito. The project leveraged the power of relationships and of the gift to create a virtuous interaction with the citizens of Procida, inviting them to participate in a program to monitor tiger mosquitoes using traps. Citizens were also scanned in 3D and had their portraits taken, which were then used to create artistic installations that fostered a sense of belonging and identity within the local community (https://nuovetecnologiedellarte.it/archivio-procida/en/archivio-ritratti/). The data collected by citizens through the program was used by researchers to study the spatial-temporal dynamics of the mosquito population. The resulting data was then returned to the community through an online animation, specifically developed for the project, which provided a simple and impactful visual representation of the eco-sustainable actions being taken on the island. The project also aimed to increase local cohesion by using the common objective of eliminating the Asian tiger mosquito as a driving force, with the ambition of making Procida one of the first places in the world to be free of this invasive vector using participatory, innovative, and sustainable methods. The impact of public involvement was significant, with 500 mosquito traps being placed on the island in just five days in May 2022, and managed by hundreds of citizens for the whole mosquito reproductive season. Data collected has been utilized to study the bionomics of the mosquito population on the island and will be used to plan the future release of sterile/incompatible male mosquitoes to suppress the infesting population. The network of relationships built during the OS project will be the starting point to design a low-cost protocol for capillary sterile insects release on the territory, based on community participation.

During the mini-conference, the protagonists of the Open Science project and members of the Italian start-up BioVecBlok (https://www.biovecblok.it/), which specialized in the eco-sustainable control of *Aedes* mosquitoes, will share their experience and discuss the main results of the project as well as future developments, also presenting video-recording of the activities on the island. The aim is to inspire other scientists, citizens, and artists to join forces and apply similar transdisciplinary and participatory approaches in their communities for the control of vector insects.

@ IAC, Tata Innovation Center - Roosevelt Island, New York City, USA - 26th July 2023 – 11:00 am