

Science news

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Inauguration of the "All'Ombra del Cervo di Rodi" Association

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submitted: Jul 8, 2024, accepted: Jul 8, 2024, Epub Ahead of Print: Jul 19, 2024, published: Aug 31, 2024

Conflict of interest: None

DOI: [10.24019/jtavr.201](https://doi.org/10.24019/jtavr.201) - Corresponding author: Prof. Giovanni La Rana, larana@na.infn.it

Introduction

This report details the inauguration of the "All'Ombra del Cervo di Rodi" Association, which took place on May 22, 2024, in the Caianiello Hall of the Department of Physics "Ettore Pancini" at the University of Naples Federico II. Founded in February 2024, the Association draws its name from the deer that adorns the magnificent column beside the Rhodes Pavilion of the Mostra d'Oltremare in Naples, a monumental building of significant historical and scientific value (Fig. 1). The deer symbolizes this area, which encompasses not only the Rhodes Pavilion but also Pavilions 19, 16, 20, and neighboring structures, all of historical and scientific importance, constituting the birthplace of the first theoretical and experimental physics schools in Naples during the late 1950s. With the exception of Pavilion 20, acquired by the CNR, these pavilions have remained unused since 2000, following the relocation of all physics activities to the Monte S. Angelo University Complex. Currently, they stand in a state of complete abandonment. The Association's primary objective is to revitalize these pavilions by establishing a center dedicated to scientific

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Fig 1 - The Pavilion of Rhodes of the Mostra d'Oltremare today.

and technological research with innovative applications and training opportunities, alongside public outreach activities.

During the inauguration ceremony, as part of the various contributions, the history of scientific activities undertaken in the former physics pavilions since the late 1950s have been illustrated. Additionally, the path that led to the founding of the Association and its objectives were outlined. To contextualize the contents presented during the inauguration and provide a clear picture of the setting, we will first delve into the historical framework regarding the pavilions. Subsequently, we will introduce the Association, concluding with the highlights of the inaugural event.

Historical Notes

The Mostra d'Oltremare has played and continues to play a leading role in the Naples area. This expansive exhibition complex, with its captivating allure, marked the birth and development of modern Naples¹⁻³. Among its numerous buildings, the monumental Rhodes Pavilion with its magnificent column topped by the deer and the nearby structures, such as Pavilion 19, hold significant historical, cultural, and scientific value.



Fig 2 - The pavilion 19 of the Mostra d'Oltremare in 1960. Institute of Theoretical Physics.

In the late 1950s, Pavilion 19 (Fig. 2) housed the School of Advanced Studies in Theoretical and Nuclear Physics founded by Eduardo Caianiello, inaugurated on April 1, 1958 by the Nobel laureate Werner Heisenberg⁴. During this same period, between late 1957 and early 1958, Giulio Cortini and Renato Angelo Ricci were called to Naples to initiate experimental activities in Nuclear Physics. Their work, using nuclear emulsion techniques and gamma scintillation spectrometry respectively, led to the establishment of mechanical workshops and experimental laboratories. This ultimately culminated in the birth of the Naples Subsection of the National Institute of Nuclear Physics (INFN) on May 15, 1961, with Giulio Cortini as its director until 1962. In 1963, the INFN Naples Section was founded, with Ettore Pancini as its first director. It is noteworthy that nuclear spectroscopy in Italy originated in Naples, with Pavilion 19 hosting the first experiments on nuclei in the $A=60$ mass region using the HVEC 400 KV neutron generator (Fig. 3).

These experimental endeavors benefited from the collaboration of emerging theoretical groups. During this period, Neapolitan physics flourished in various areas, including theoretical physics and cybernetics, fields and particles, matter physics, and biophysics.

By 1969, four Institutes of Physics from the University of Naples were active, each located at a distinct site: the Institute of Experimental Physics (IFS), the Institute of Superior Physics, the Institute of Theoretical Physics (IFT), and the INFN Section of Naples, directed

respectively by Antonio Carrelli, Ettore Pancini, Eduardo Caianiello, and Bruno Vitale. In 1970, the Institute of Superior Physics merged with the Institute of Experimental Physics, which was then based at Federico II University on Via Tari under the leadership of E. Pancini. The INFN Section headquarters also relocated to Via Tari under the direction of Giancarlo Gialanella, while the Institute of Theoretical Physics maintained its position in Pavilion 19 of the Mostra d'Oltremare.

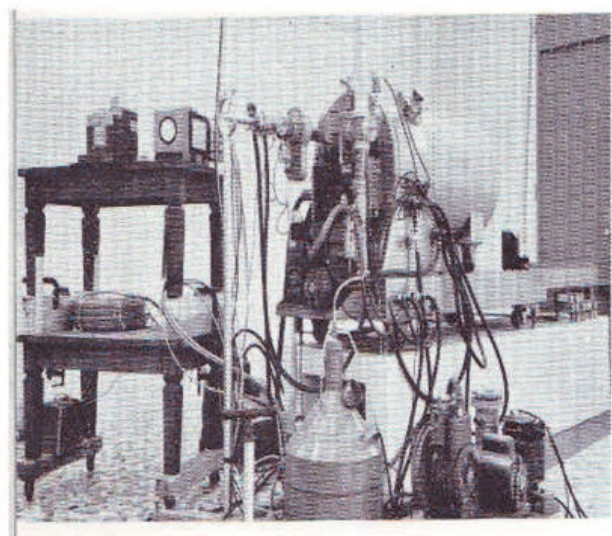


Fig 3 - Accelerator 400 kV (HVEC) - Naples 1960. Pav. 19 Mostra d'Oltremare.



Fig 4 - Accelerator Tandem TTT3 (HVEC) 3 MV - Naples 1974. Pav. 16 Mostra d'Oltremare.

The year 1974 witnessed the installation of the University of Naples' Tandem TTT3 (HVEC) 3 MV accelerator in Pavilion 16 of the Mostra d'Oltremare (Fig.4). The construction of the accelerator laboratory and the decision to locate it within a pavilion of the Mostra, facilitated by the existing presence of the Institute of Theoretical Physics in Pavilion 19, subsequently led to the transfer of the IFS headquarters, the INFN Section, and the Interfaculty Computing Center to the same complex. In the late 1970s, the INFN Section and IFS initiated their transfer from Via Tari to the Mostra d'Oltremare pavilions. By 1983, physicists had permanently relocated from the Via Tari headquarters to the Mostra d'Oltremare.

The 1980s witnessed a multitude of events that significantly impacted the scientific and educational endeavors of the physicists. University reform led to the establishment of Departments, and the Italian university system finally implemented a doctoral program. At the University of Naples, two departments were created: the Department of Physics and the Department of Nuclear Physics, Structure of Matter and Applied Physics; the INFN Section operated within the purview of both. These departments later merged into the Department of Physical Sciences. Research activities received a substantial boost in both experimental and theoretical domains, further bolstered by the establishment of the INFN Linked Group in Salerno in 1985.

Theoretical and experimental physicists continued to occupy the Mostra d'Oltremare pavilions until 1997-2000, marking the period of their transfer to the Monte S. Angelo Complex. From the pioneering experiments conducted in Pavilion 19 during the 1960s to the present day, theoretical and experimental physics activities have witnessed remarkable growth. This has positioned the Department of Physics, alongside the INFN Section and other affiliated entities, as one of the largest national structures in its field. Currently, it operates with a staff and associates numbering in the hundreds, including the INFN Linked Group of Salerno. This Department has

significantly contributed to groundbreaking discoveries in recent years, such as neutrino oscillation, the Higgs boson, and gravitational waves. These achievements were realized through international collaborations and experiments conducted in laboratories worldwide.

The "All'Ombra del Cervo di Rodi" Association

The genesis of the "All'Ombra del Cervo di Rodi" Association can be traced back to 2019. In that year, Vincenzo De Luise and Cosimo Stornaiolo established a Facebook page titled "All'Ombra del Cervo di Rodi. Fisica a Napoli nel secolo XX" (<https://www.facebook.com/groups/486921592133306/>). This platform served to raise awareness about the neglected state of the former physics pavilions at the Mostra d'Oltremare, while simultaneously emphasizing their historical and scientific significance. Their efforts culminated in a petition letter addressed to Dr. Remo Minopoli, President of the Mostra d'Oltremare, followed by a productive meeting with him in June 2023. This initiative: was accompanied by an important collection of historical materials pertaining to the former physics pavilions.

The Association itself was formally established in February 2024 by nine founding members. It is driven by the following core objective.

To revitalize the designated area of the Mostra d'Oltremare (encompassing Pavilions 19, 16, the Rhodes Pavilion, and adjoining structures). This endeavor will involve collaboration with institutions, entities, associations, and individuals invested in the development of the local territory. The ultimate goal is to establish a center of excellence dedicated to scientific and technological research, fostering high-innovation activities, training programs, and public outreach initiatives.

To achieve these goals, the Association actively promotes cultural and scientific initiatives. These initiatives will primarily focus on activities historically linked to this specific area, aiming to raise public awareness of the Association's project and the affiliated institutes.

A strategic action plan was formulated during the second meeting with the President of the Mostra d'Oltremare, which took place on March 11, 2024. The Association has grown steadily since its inception, and currently boasts approximately 40 members. For the latest information regarding its activities, please visit the Association's website: <https://www.cervodiropi.it/>.

The Association's working program

The Association's work program is structured into three distinct phases:

Working phases

1. Network Formation (Ongoing)

This phase, currently underway, focuses on establishing a network of institutes and entities that share an interest in the project. To achieve this, the Association actively seeks collaborative agreements with relevant organizations. Significant progress has already been made, with agreements formalized between the Association and the following entities: Department of Physics "Ettore Pancini" of the University of Naples Federico II, Mostra d'Oltremare, Institute of Applied Sciences and Intelligent Systems (ISASI/CNR). Furthermore, agreements are in the preparatory stage with the Institute of Superconductors, Innovative Materials, and Devices (SPIN/CNR) and the Scuola Superiore Meridionale. The Association intends to broaden its network by establishing agreements with the INFN Section of Naples, additional university Departments, and other relevant entities.

2. Feasibility Study

This phase will involve the formation of a dedicated study group tasked with developing a feasibility project for a center of excellence in scientific and technological research. The center will prioritize high-innovation activities, training programs, and public outreach initiatives.

3. Project Implementation

The final phase entails presenting the feasibility project to potential funding bodies. Once secured, funding will be used to develop a comprehensive executive project for the center.

The aforementioned work program will be complemented by public engagement initiatives. In particular, by a series of cultural activities designed to raise public awareness of the Association and its objectives. These initiatives will primarily focus on the following:

Initiatives

- Seminars: The Association will organize seminars to disseminate knowledge and foster discussion on relevant topics.
- Exhibitions: The Association plans to host photographic and bibliographic exhibitions, alongside exhibitions showcasing historical scientific instruments. These exhibitions will be held at various locations, including the Mostra d'Oltremare, the Physics Museum, Libraries, and Departments of the University of Naples Federico II.

The Association is further committed to outreach activities within schools and to editorial endeavors. A particularly noteworthy project within this domain is the book titled: "All'Ombra del Cervo di Rodi: Le memorie della Fisica a Napoli nella Mostra d'Oltremare", which is currently under development.



Fig 5 - The President of the Association C. Stornaiolo.

A Vision for the Future: A Center of Scientific and Technological Excellence

The revitalization of the designated area within the Mostra d'Oltremare presents a unique opportunity. This area encompasses Pavilions 19, 16, and the Rhodes Pavilion, along with adjoining structures such as the former Computing Pavilion, the former Institute for Economic Development (ISVE), and the Pavilion of Christian Civilization in Africa. By leveraging these spaces, a future Center of excellence in scientific and technological research can be envisioned. This center would prioritize high-innovation activities, alongside robust training programs and impactful public outreach initiatives.

The proposed Center could be structured around four core areas of activity:

Core areas of activity

1. Technological Research and Applications: This area would focus on cutting-edge research and development endeavors with practical applications.
2. Theoretical and Experimental Scientific Research: This area would foster fundamental scientific inquiry, encompassing both theoretical and experimental approaches.
3. Training and Outreach: This area would prioritize the development of the next generation of researchers and scientists by providing high-level training programs. Additionally, it would facilitate

public engagement with science through outreach initiatives.

4. History of Physics: This area would serve as a repository for the rich history of physics at the Mostra d'Oltremare. It would showcase this legacy through exhibits and educational programs.

The ample space available within the designated area presents exciting possibilities. It could accommodate conferences, workshops, and other scientific events. There would be dedicated areas for publishing scientific findings, fostering continuous public education, facilitating open discussions, and hosting activities that have a significant impact on the surrounding local community.

Drawing Inspiration from Excellence

The Association has identified several established Centers of excellence in Italy and abroad as models to emulate. These include: Galileo Galilei Institute (GGI Arcetri-Florence), Gran Sasso Science Institute (GSSI-L'Aquila), The International School for Advanced Studies (SISSA-Trieste), Perimeter Institute for Theoretical Physics (Waterloo, Canada). These institutions provide valuable frameworks for the development of the envisioned center.



Fig 6 - From the left: the Director of the Department of Physics 'Ettore Pancini' G. Miele and the President of the Mostra d'Oltremare R. Minopoli.



Fig 7 - The Presidents of the Association C. Stornaiolo and of the Mostra d'Oltremare R. Minopoli signing the Memorandum of Understanding.

Building upon past initiatives, colleagues within the Department of Physics "Ettore Pancini" have previously explored the creation of a Mediterranean Center of Excellence. Inspired by the successful model of SISSA, this center would foster collaboration with national and international institutes, with a particular focus on countries within the Mediterranean basin. Its core activities would encompass: an international doctoral school, Master's programs, Continuous training opportunities, Scientific outreach events, Synergistic initiatives combining technological/applied research with fundamental scientific research. The Association is committed to reviving this promising initiative and incorporating it into the overall vision for the future center.

Inauguration highlights

As previously mentioned, on May 22, 2024, the "All'Ombra del Cervo di Rodi" Association celebrated the beginning of its activities with an inaugural event, held within the Caianiello Hall, Department of Physics 'Ettore Pancini' at the University of Naples Federico II. The ceremony featured distinguished speakers including Dr. Cosimo Stornaiolo, President of the Association; Dr. Remo Minopoli, President of Mostra d'Oltremare; Prof. Gennaro Miele, Director of the Department of Physics 'Ettore Pancini'; and Prof. Giovanni La Rana, former Director of the INFN Naples Section. The event was chaired by Dr. Gianfranco Iodice.

The event opened with an address from Dr. Cosimo Stornaiolo, President of the Association (Fig. 5), who extended a warm welcome to all the participants. He underlined the state of abandonment of the former physics pavilions of the Mostra d'Oltremare. He then emphasized the Association's project as a catalyst for positive change, with the potential to yield significant benefits for future generations of young peoples. Briefly outlining the Association and core objectives, Dr. Stornaiolo concluded by expressing his appreciation for the Association's existing membership and the nearly

400 participant engaged on the Facebook page, hoping for their continued involvement and contributions to the Association's endeavors..

Following the opening address, Prof. Giovanni La Rana delivered a brief speech, underlining the importance of the presence of young people at the event, acknowledging that the Association's inauguration marks the beginning of a forward-looking journey. He briefly went through the history of the former physics pavilions, emphasizing their role as the foundation for the extensive research activities currently undertaken by the Department of Physics in collaboration with the INFN Section of Naples and other affiliated institutes.

In his address, Dr. Remo Minopoli, President of the Mostra d'Oltremare, acknowledged the receipt of a petition letter concerning the former physics pavilions in 2019. Signed by a multitude of scientists, the letter left a lasting impression. Dr. Minopoli expressed his admiration for the perseverance and determination demonstrated by the group that established the Association. He acknowledged that the abandonment of the pavilions stemmed from a lack of a well-defined, comprehensive vision for the area. However, Dr. Minopoli emphasized a shift towards a recovery phase, aligning with the Minister's words to reviving the Mostra d'Oltremare's central role within the city's cultural landscape. He underscored the importance of

establishing a formal memorandum of understanding with the Association, given its ambitious and well-structured work program. Dr. Minopoli concluded his remarks by emphasizing the need for fostering strong synergies between the various institutes involved, a crucial factor for the project's success (Fig. 6).

Prof. Gennaro Miele, Director of the Department of Physics, recalled the historical significance of the former physics pavilions. He emphasized their important role in the development of physics research. He also alluded to the positive impressions garnered from many visitors who found the area to be intellectually stimulating. He acknowledged the limitations of Federico II University in directly leading the Association's project due to its existing commitments to numerous endeavors. However, he expressed his enthusiasm for fostering collaborations between various institutes based on a well-defined project framework. The University would be positioned to make substantial contributions within such a collaborative structure. He concluded his address on an optimistic note. He highlighted the presence of the Mostra d'Oltremare President and the engaged scientific community as positive factors that could coalesce into a powerful force, ultimately leading to the project's successful completion. He emphasized the importance of these initial steps, framing them as "sowing for the future."



Fig 8 - The founding members of the Association together with the President and the Architect of the Mostra d'Oltremare R. Minopoli and N.P. Perfetto. From the left: G. Amodeo, N.P. Perfetto, F. Cocifoglia, V. De Luise, L. Allocca, R. Minopoli, C. Stornaiolo, G. Iodice, G. La Rana, A.M. Esposito, I. Stazio.

Prof. Giovanni La Rana's presentation highlighted the historical and scientific significance of the targeted locations and detailed the Association's action plan. He also referenced several operational research and high training centers in Italy and abroad, concluding with the potential revival of a past initiative to create a Mediterranean Research and High Training Center. In the context of the current crisis, offering doctoral opportunities to young people from Mediterranean nations holds great importance.

The event concluded with the address by Prof. Giuseppe Trautteur, who reminisced about his time in Naples during the 1960s, when he was captivated by the groundbreaking cybernetics initiative, E. Caianiello playing a crucial role. He emphasized the significance of the

establishment, at that time, of the electronic-cybernetic branch within the degree program, a decision that proved to be very fruitful.

At the end of the inauguration, a Memorandum of Understanding between the Association and Mostra d'Oltremare was signed, sealing their commitment to this ambitious project (Fig. 7). Both the Director of the Department and the President of Mostra d'Oltremare reaffirmed their support for the Association's initiative, emphasizing that the collaboration across institutions is crucial for achieving the Association's goals. Fig. 8 shows a photo of the founding members together with the President and the Architect of the Mostra d'Oltremare.

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