

VALENTINA PERRICONE

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Research topics: functional morphology, marine ecology, and biomimetics.

Valentina Perricone is a marine biologist with a PhD in “Environment, Design and Innovation” at the University of Campania “Luigi Vanvitelli”. She achieved a bachelor’s degree cum laude in “Natural Science” at the Federico II, University of Naples, Italy, and a master’s degree cum laude in “Marine Biology” at the Alma Mater Studiorum, University of Bologna, Italy. She collaborated with the Smithsonian Tropical Research Institute of Panama - Collin’s Lab, Bocas del Toro, Panama, and the University of Florida - Invertebrate Paleontology, Gainesville, Florida, USA.

The majority of her current research regards field and lab experiments to collect and analyze data on the echinoid skeletal structure in the contexts of functional morphology and technical innovation. In addition, her interests regard biomimetic and paleomimetic research for industrial design, architecture, coastal engineering, automotive, robotics and aerospace supported by multiple academic and industrial experiences acquired during internships, research grants and private commissions.

The latest relevant papers

1. **Perricone, V.**, & Collin, R. (2019). Larvae of Caribbean Echinoids Have Small Warming Tolerances for Chronic Stress in Panama. *The Biological Bulletin*, 115-129. (doi: 10.1086/701666)
2. **Perricone, V.**, Grun, T., Marmo, F., Langella, C. & Candia Carnevali, M.D (2020) Constructional design of echinoid endoskeleton: main structural components and their potential for biomimetic applications. *Bioinspiration&Biomimetics*. (doi: 10.1088/1748-3190/abb86b)
3. Marmo, F., **Perricone, V.***, Cutolo, A., Langella, C. Candia Carnevali, M.D & Rosati I. (2021) Flexible sutures reduce bending moments in shells: from the echinoid test to tessellated shell structures. *Royal Society Open Science*, 9(5), 211972. (<https://doi.org/10.1098/rsos.211972>)
4. **Perricone, V.**, Grun, T., Raia, P., & Langella, C. (2022). Paleomimetics: A Conceptual Framework for a Biomimetic Design Inspired by Fossils and Evolutionary Processes. *Biomimetics*, 7(3), 89. (<https://doi.org/10.3390/biomimetics7030089>)
5. **Perricone, V.**, Grun, T., Rendina, F., Marmo, F., Candia Carnevali, M. D., Kowalewski, M., Facchini, A., De Stefano, M., Santella, L., Langella, C., Micheletti A. (2022) Hexagonal Voronoi pattern detected in the microstructural design of the echinoid skeleton. *Journal of Royal Society Interface*, 19, 193. (<https://doi.org/10.1098/rsif.2022.0226>)