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Research Interests

Octopoda is a large group of mollusc cephalopods appeared in the Late Jurassic (~156 Ma) and strongly diverged since then. Its members possess a complex nervous system (they are considered one the most intelligent and behaviourally complex group of animals) and well-developed sensorial abilities, including an excellent sight. Octopods mainly rely on vision for prey capture, predator avoidance (they are well known for their camouflage abilities), and communication. Therefore, adaptations on their light receptors' gene repertoire (e.g., changes in opsins' genes) are expected in octopods species living in different light condition (e.g., between species living at different depths). The focus of my research is to quantify and characterise these changes by extracting, sequencing and analyse the opsin genes involved in vision in different octopuses' species by using comparative phylogenetics and molecular evolution methods.

I am also interested in the Cambrian Explosion and the evolution of the first modern metazoan dominated ecosystems. I use 3-D modelling to reconstruct the anatomy of exceptionally preserved flattened fossils such as those of found in Burgess or in Sirius Passet.

Journal Papers

1. De Vivo, G., Lautenschlager, S., & Vinther, J. (2021). Three-dimensional modelling, disparity and ecology of the first Cambrian apex predators. *Proceedings of the Royal Society B*, 288(1955), 20211176. <https://doi.org/10.1098/rspb.2021.1176>

2. Park, T.-Y. S., Nielsen, M. L., Parry, L. A., Sørensen, M. V., Lee, M., Kihm, J.-H., Ahn, I., Park, C., De Vivo, G., Smith, M. P., Harper, D. A. T., Nielsen, A. T., & Vinther, J. (2024). A giant stem-group chaetognath. *Science Advances*, 10(1). <https://doi.org/10.1126/sciadv.adi667>
3. De Vivo, G., Crocetta, F., Ferretti, M., Feuda, R., & D'Aniello, S. (2023). Duplication and losses of opsin genes in lophotrochozoan evolution. *Molecular Biology and Evolution*, 40(4), msad066. <https://doi.org/10.1093/molbev/msad066>

Conference Papers

1. Cavalazzi, B., Hickman-Lewis, K., Balotti, L., Cardeno Rua, M. A., Ragazzo, A. V., Tarozzi, A., Martellotti, R., Lo Giudice, E., De Vivo, G., Gragnaniello, F., & Barbieri, R. (2021). *Astrobiology Lab. at the University of Bologna: ongoing projects and perspectives*. Memorie della società Astronomica Italiana, Pisa-Roma.