

Persephone of the nervous system: Non-neuronal cells rise from the misty gloom in the Mediterranean area

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Mediterranean Neuroscience Society — a bridge across waters: For millennia, the Mediterranean Sea has served as a crossroads for civilizations, fostering the exchange of ideas, cultures, and knowledge. In keeping with this tradition, the Mediterranean Neuroscience Society (MNS) emerged from a series of neuroscience conferences held in Montpellier (1997), Marrakech (2006) and Alexandria (2009) and was officially established in 2009. The Society has three major objectives: to promote interactions among Mediterranean neuroscientists; to advance education in the field of neuroscience; and to raise public awareness of the advances made and the impact of neuroscience on society. MNS has long embraced a philosophy of equity, diversity and inclusivity, actively supporting cooperation among neuroscientists throughout the Mediterranean and particularly funding research from underrepresented countries, including regions in North Africa and the Eastern Mediterranean. The MNS biennial conference brings together neuroscientists from a variety of geographical, cultural, and scientific regions, to share the best of their knowledge and experience. The congress rotates among host countries around the Mediterranean to meet and showcase the work and establish collaborative partnerships of researchers around the Mediterranean coast. Such commitment to geographical equity distinguishing the MNS from broader global societies creates novel avenues for discourse and collaboration.

As a member of the International Brain Research Organization working in synergy with the Federation of European Neuroscience Societies and the Society of Neuroscientists of Africa, MNS serves as a vital interface between local research communities and the global neuroscience enterprise. Through travel grants for early-career scientists, dedicated networking events and increased visibility for North-South collaborations, MNS is actively committed to addressing the economic and institutional disparities that might otherwise restrict scientific exchanges and opportunities.

The 10th Mediterranean Neuroscience Society Conference: The 10th MNS conference, held in June 2025 in Chanià on the island of Crete (Greece), represented a symbolic return to the cradle of the Minoan civilization, at the geographical and cultural heart of the Mediterranean. Bridging myth and scientific inquiry, the conference gathered early-career researchers and established neuroscientists, covering the full spectrum of basic, translational, preclinical, and clinical neuroscience.

In addition to four keynote lectures — the opening lecture by Shubha Tole on hippocampal development, followed by Margaret M. McCarthy on sex-specific influences in neuro-immune-endocrine interactions, Giovanni Marsicano on cannabinoids and the brain complexity, and

Panagiota Poirazi on dendrite neuroplasticity in the brain — the conference offered a broad scientific overview of multiple fields of current neuroscience research through 63 symposia comprising more than 250 oral presentations. Topics ranged from the molecular and cellular pathophysiology of neurodegenerative diseases, including amyotrophic lateral sclerosis, Parkinson's disease, and Alzheimer's disease, to the neurodevelopmental processes, synaptic and circuit plasticity and neuro-immune modulation in cognitive and psychiatric disorders. Neuroendocrine mechanisms and sex- and gender-based approaches to neurobiology emerged as prominent themes across several symposia. Additional sessions addressed the neurophysiology of pain, and extended into neuropharmacology, with particular emphasis on environmental neurotoxicology.

Echoing Cretan mythology, much as Theseus was guided through Daedalus' labyrinth by Ariadne's thread to escape the Minotaur, participants at the MNS 2025 meeting in Chania were led through a complex maze of topics that extended well beyond a neuron-centric view of the nervous system. A substantial proportion of the scientific program focused on the growing importance of non-neuronal cells in neurological and neurobiological research. Indeed, at least one-fifth of the sixty-three symposia addressed neuroscience from the non-neuronal cell perspective, highlighting emerging and promising conceptual frameworks (Figure 1).

In parallel, ninety posters, predominantly presented by early-career neuroscientists, complemented the symposium program. As the Minotaur conceals a human body beneath a bull's head, the contribution of non-neuronal cells in the nervous system functions can remain obscured by a traditionally neurocentric perspective. Nevertheless, the role of non-neuronal cells in nervous system health and disease emerged as a recurring theme across many poster presentations, although less frequently than that observed in the symposia.

The shift towards a “more than neurons” perspective within the MNS can be traced back to previous editions of the conference. As early as Dubrovnik 2022, seven of the 62 symposia included at least one presentation focused on glia cells. This trend became more pronounced in Carthage 2023, where ten of the 43 symposia addressed glia biology, and one of the five keynote lectures discussed the effects of cannabinoids on microglia and systemic energy metabolism. The strong participation of gliologists at Chania MNS2025, together with the increased prominence of non-neuronal cells in both symposia and posters sessions, demonstrates that MNS conferences and their community constitute a fertile and attractive environment for exploring neuroscience beyond neuron-centric framework. The evident enthusiasm and growing engagement in this area, combined with the community's commitment to MNS meetings over the years (Figure 2), motivated a group of MNS members — many of them gliologists — to undertake an ambitious initiative and establish the MNS Group for Glia and Non-Neuronal cells.

The Mediterranean Neuroscience Society Group for glia and non-neuronal cells — the Mediterranean Neuroscience Society-Glia&More:

The MNS-Glia&More group (<https://www.medneuroscisociety.org/glia-and-more-group.php>) was launched shortly after the Chania 2025 meeting with explicit aim of strengthening the MNS scientific community's focus on non-neuronal cells and stimulating new research interests in this rapidly expanding field. Guided by the MNS' founding principles of collaboration, inclusivity, and geographical equity, MNS-Glia&More seeks to foster innovative networks of glia biologists within the Society and to create the conditions for equitable representation of all Mediterranean countries in non-neuronal research. To celebrate the formal inauguration of our group in December 2025, we hosted a webinar entitled “Physiology of Astroglia” led by Alexei Verkhratsky from the University of Manchester (UK), with certainty that other webinars will follow in the Autumn of 2026.

The newly established MNS-Glia&More group, coordinated by Mariagrazia Grilli and Valerio Magnaghi, currently includes scientists from France, Germany, Greece, Italy, Morocco, Poland, Portugal, Slovenia, Spain and Turkey. While many current members hold mid- to senior-level positions, MNS-Glia&More is strongly committed to inclusivity and will advocate for the active participation of early-career scientists. They are encouraged to present their work and to network with both junior and senior colleagues within the collaborative and supportive MNS environment.

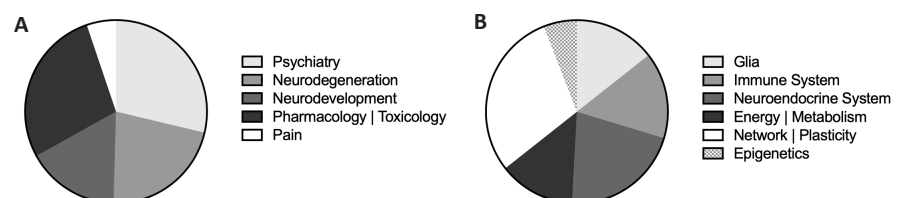


Figure 1 | Graphical summary of the proportion of the broad topics covered by the 63 symposia at the MNS 2025 in Chania.

(A) Main fields of research. Psychiatry 28.7%; Neurodegeneration 21.7%; Neurodevelopment 16.52%; Pharmacology | Toxicology 27.83%; Pain 5.22%. (B) Mostly investigated and presented biological substrates. Glia 14.41%; Immune System 15.25%; Neuroendocrine System 21.19%; Energy | Metabolism 13.56%; Network | Plasticity 29.66%; Epigenetics 5.93%. MNS: Mediterranean Neuroscience Society.

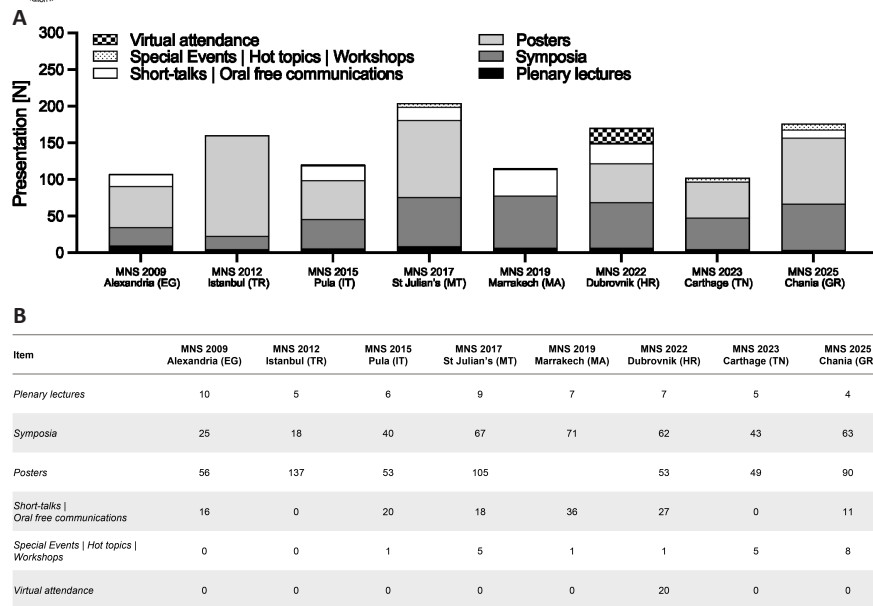


Figure 2 | Overview of the contribution to the MNS conferences through the years.

(A) Bar graph showing the types and amount of presentation offered during the MNS conferences; (B) the exact values integrated in the bar graph. MNS: Mediterranean Neuroscience Society.

In line with the broader mission of the MNS, the MNS-Glia&More is dedicated to support neuroscience across the Mediterranean while remaining open to the participation of gliologists from around the world. We strongly encourage the participation of neuroscientists from all continents so that they can appreciate the “deep, misty waters of the Mediterranean Sea.” The next MNS conference, which will be held June 5–9, 2027 in Tangier, Morocco, will provide an additional platform for networking and for advancing discussions on neuroscience from neuronal and non-neuronal perspectives.

We thank the MNS Council for supporting the establishment of the group MNS-Glia&More. We are grateful to the organizers of MNS 2025 for

creating an inclusive and stimulating conference environment, and to all participants at MNS 2025 for their stimulating scientific contributions. This work reflects the collective efforts of the entire Mediterranean Neuroscience community.

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