



UNIVERSIDAD DE GRANADA

Máster Universitario en
Neurociencia Cognitiva
y del Comportamiento

"Marisa Arnedo" Inaugural lecture - Prof. Binda: "Plasticity of the adult visual system"

~~Desde~~ el Mar, 30/09/2025 - 12:00

**Plasticity
of the
adult
visual
system:
learning
from**



unpredictability

Date, time and venue: September 30th, 2025, 11:00, Conference Room I - CIMCYC

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Abstract: Like most our decisions, perception combines current evidence with a priori knowledge. This predictive mode of processing is efficient, because it waives the need for representing most of the incoming sensory information: anything that can be a priori expected. However, if sensory information is not represented, we cannot learn from it, leading to the hypothesis of an antagonism between predictability and plasticity. Using ocular dominance as an established model of plasticity, and a combination of ultra-high field Magnetic Resonance imaging with psychophysiological measurements, we provided initial evidence that sensory unpredictability is sufficient to trigger short-term cortical reorganization, and that cortical plasticity is gated by subcortical modulatory inputs primarily carried through the thalamic nucleus pulvinar. Based on these findings, we propose a novel model of how experience stabilizes the sensory areas of the adult brain, and suggest innovative strategies for reopening plasticity, e.g. to treat diseases like amblyopia.