

## FOREWORD

Abundance gradients in galaxies are fundamental tools to investigate the physical mechanisms driving the formation and evolution of galaxies. They have been widely used to constrain whether galaxies formed inside-out (e.g. the disks of spirals) or outside-in (e.g. elliptical galaxies). More recently they have been used to investigate either the dual nature of the Galactic Halo (in situ versus accreted) or the occurrence of a warp in the outer regions of the Galactic thin disc. Abundance gradients, indeed, strongly depend on the gas infall and outflow rates, on the star formation laws and on the adopted stellar tracers. The use of high resolution spectrographs at the 8-10m class telescopes provided the opportunity to measure abundance gradients across a significant portion of the Galactic spheroid. The use of Integral Field Spectrographs opened a new path in the analysis of abundance gradients in external galaxies and brought forward a complex empirical scenario (gradient inversion, clumpy distributions) for which we still lack a comprehensive theoretical framework. This meeting has been held in the Sexton Center for Astrophysics and it has been very timely paving the road to future spectroscopic surveys. Indeed, in a few years new and accurate abundance measurements are going to become available not only for the Milky Way thanks to past and ongoing spectroscopic Galactic surveys, such as Gaia-ESO, APOGEE, WEAVE, GALAH, 4MOST), but also for nearby stellar systems (MOONS, MAVIS).

**The Scientific Organizing Committee:** *F. Matteucci, G. Bono, G. Cescutti*