

# Poisson Geometry and Beyond

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Poisson structures are central objects in classical mechanics and quantization, and have long standing connections with Lie theory, particularly in the study of symmetries. These lectures will focus on connections between Poisson geometry and the broader theory of Lie algebroids and groupoids. We will recall how symplectic groupoids naturally arise in Poisson geometry and lead to the study of multiplicative geometric structures on groupoids. Along the way, we will see how objects such as Dirac structures and Courant algebroids, originally introduced to describe constraints in mechanics, fit into the picture.