Carolina Benedetti Velasquez
(Universidad de los Andes, Colombia)

Lattice Path Matroids, Polytopes and Permutations
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In this course we will introduce matroids and its various definitions. In particular we will focus our attention to matroids that are representable over the real numbers, as these family contains the class of positroids, which in turn contain lattice path matroids as a subfamily. We will illustrate the very rich combinatorics behind positroids. This will allow us to illustrate how different points of view of the same object allow us to obtain information needed to dive into the problem: How can we characterize combinatorially quotients of positroids? Before getting our hands dirty on this, we need to understand quotients from different perspectives. In particular, we will give a complete characterization of quotients for the class of lattice path matroids. This is current work with K. Knauer.