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**Gordon Rojas Kirby\*** (girkirby@gmail.com). *Pure Salvetti complexes and Euclidean Artin groups.*

Artin groups are a far-reaching generalization of the much better-known braid groups. For most Artin groups it is still unknown how to solve their word problem. This talk will introduce a new approach to the word problem for Artin groups that lies at the intersection of topology, combinatorics, and geometry. My work centers on a combinatorially defined cell complex that is homotopy equivalent to an intermediate covering space and decomposing it into understandable pieces. I will reduce the word problem to a simpler problem that can be stated about compact, combinatorially defined, zonotopal cell complexes, give brief illustrations of some work from my dissertation, and give concrete solutions to word problem for specific Euclidean Artin groups. Lastly, I will discuss the promise and difficulties of generalizing this approach to general Artin groups. (Received August 03, 2020)