1078-16-168 **Gene Abrams*** (abrams@math.uccs.edu), Department of Mathematics, University of Colorado, 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918, and **Zachary Mesyan** (zmesyan@uccs.edu). *Simple Lie algebras arising from Leavitt path algebras.* Preliminary report.

For a field K and directed graph E, we analyze those elements of the Leavitt path algebra $L_K(E)$ which lie in the commutator subspace $[L_K(E), L_K(E)]$. This analysis allows us to give easily computable necessary and sufficient conditions to determine which Lie algebras of the form $[L_K(E), L_K(E)]$ are simple, when E is row-finite and $L_K(E)$ is simple. (Received December 05, 2011)