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**Gregory J Galloway** and **Carlos Vega\*** ([vegaca@slu.edu](mailto:vegaca@slu.edu)). *Spacetime rigidity and splitting.*

The Lorentzian splitting theorem is a close analog of the Cheeger-Gromoll splitting theorem in Riemannian geometry, and was originally conjectured by S.-T. Yau in 1982 as a way of addressing the rigidity of the classical singularity theorems of Hawking and Penrose. Ultimately, the splitting theorem did not settle this rigidity question, and Robert Bartnik formulated a precise conjecture in 1988. In this talk, we will discuss recent developments in Lorentzian rigidity theory more generally, including applications to the Bartnik splitting conjecture. (Received January 06, 2017)