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**Xinliang An\*** ([xan@math.rutgers.edu](mailto:xan@math.rutgers.edu)), Hill Center for the Mathematical Sciences, 110 Frelinghuysen Road, Piscataway, NJ 08854-8019. *On gravitational collapse in general relativity.*

In this talk, we will address and seek the answers to three questions: 1) Can “black holes” form dynamically in vacuum? 2) To form a “black hole”, what is the least size of initial data? 3) For Einstein vacuum equation, could singularities other than black hole type emerge in gravitational collapse?

This talk is based on two joint works. One is with Jonathan Luk, and the other one is with Xuefeng Zhang. (Received January 17, 2016)