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**Peter Pivovarov\*** (pivovarovp@missouri.edu) and **Jesus Rebollo Bueno**. *Stochastic forms of Brunn's principle.*

A number of geometric inequalities for convex sets arising from Brunn's concavity principle have recently been shown to yield local stochastic formulations. Comparatively, there has been much less progress towards stochastic forms of related functional inequalities. We work towards a stochastic geometry of concave functions to establish local versions of dimensional forms of Brunn's principle a la Borell, Brascamp-Lieb, and Rinott. To do so, we define shadow systems of convex epigraphs and hypographs, and revisit Rinott's approach in the context of multiple integral rearrangement inequalities. (Received August 17, 2020)