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**Michael Gene Dobbins\***, 4400 Vestal Pkwy E, Binghamton, NY 13902, and **Sergio Cabello**  
and **Otfried Cheong**. *The inverse Kakeya problem.*

In this talk I will show that the largest convex shape that can be placed inside a given convex shape  $Q$  in  $d$ -space in any desired orientation is the largest inscribed ball of  $Q$ . The statement is true both when largest means largest volume and when it means largest surface area. The ball is the unique solution, except when maximizing the perimeter in the two-dimensional case. This is joint work with Sergio Cabello and Otfried Cheong. (Received January 21, 2022)