Alexander Wright* (alexmurraywright@gmail.com), 204 Durand Way, Palo Alto, CA 94304.

*The fascinating and unlikely geometry of billiards in certain polygons.* Preliminary report.

We will give new examples of flat surfaces (including unfoldings of billiard tables) with amazing and unexpected geometry and dynamics. The talk will feature connections to algebraic geometry, but will be mostly self-contained. Joint work with Alex Eskin, Curt McMullen, and Ronen Mukamel. (Received September 22, 2015)