1108-35-489 Vera Mikyoung Hur*, Department of Mathematics, University of Illinois at Urbana-Champaign, 1409 W Green Street, Urbana, IL 60801. *Breaking the Waves*.

It is a matter of experience that the surface of an ocean wave, after some time, may become vertical and accelerate infinitely rapidly; thereafter a portion of the surface overturns, projects forward and forms a jet of water. Think of the stunning Hokusai wave. I will begin by going over laboratory experiments and numerical simulations which support "breaking" of water waves. I will talk about recent analytical proofs of splash singularity in *exact* water waves. The complexity of the governing equations habitually prevents a detailed account, though. I will then discuss various approximate models of water waves, blowup of their solutions and ill-posedness. (Received January 19, 2015)