1063-11-90   **Olav K Richter*** (`richter@unt.edu`), Department of Mathematics, University of North Texas, 1155 Union Circle #311430, Denton, TX 76203-5017, and **Kathrin Bringmann** (`kbringma@math.uni-koeln.de`), Mathematical Institute, University of Cologne, Weyertal 86-90, 50931 Cologne, Germany. *Harmonic Maass-Jacobi forms.*

The real-analytic Jacobi forms of Zwegers' Ph.D. thesis play an important role in the study of mock theta functions and related topics, but they have not been part of a rigorous theory yet. In this talk, I will report on joint work with Bringmann introducing harmonic Maass-Jacobi forms, which include the classical Jacobi forms as well as Zwegers' functions as examples. Maass-Jacobi-Poincare series also provide examples. We compute their Fourier expansions, which yield Zagier-type dualities and also yield a lift to skew-holomorphic Jacobi-Poincare series. Finally, we link harmonic Maass-Jacobi forms to different kinds of automorphic forms via a commutative diagram. (Received August 08, 2010)