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Bruce C. Berndt* (berndt@illinois.edu), Dept. of Mathematics, University of Illinois, 1409 West Green St., Urbana, IL 61801, and **Atul Dixit** (aadixit2@illinois.edu), Dept. of Mathematics, University of Illinois, 1409 West Green St., Urbana, IL 61801. *A Transformation Formula Involving the Gamma and Riemann Zeta Functions Found in Ramanujan's Lost Notebook.*

Published with Ramanujan's lost notebook are several partial manuscripts by Ramanujan that were copied by G. N. Watson; the original manuscripts in Ramanujan's handwriting have evidently been lost. One of these, on Fourier and Laplace transforms, features a beautiful transformation formula involving the logarithmic derivative of the Gamma function and the Riemann zeta function, or, more precisely, Riemann's Ξ -function. We describe the interesting features and history of this transformation formula and sketch two proofs of it due to the speaker and Atul Dixit. (Received August 21, 2009)