1135-01-1372 **Paul R Wolfson*** (pwolfson@wcupa.edu), Dept of Mathematics, West Chester University, West Chester, PA 19383. *Riemann's Twofold Path to Curvature.* Preliminary report.

Riemann's 1854 habilitation address leaves puzzles for historians of mathematics, because it lays out fundamental features of what we now call Riemannian geometry but offers few details of either the steps by which Riemann reached his conclusions or the insights which motivated them. Olivier Darrigol [2] demonstrated a very plausible path directly from Gauss's work on surfaces. Others have suggested a strong connection between Riemann's physical researches and the starting point of Riemann's geometry. (See [1}.) This talk traces a path from that starting point to Riemann's curvature via some natural geometric developments. In doing so, it explains some puzzles about his work and also something of the structure of the habilitation address. [1] Bottazzini, U. and R. Tazzioli, Naturphilosophie and Its Role in Riemann's Mathematics, Revue d'histoire des mathématiques 1 (1995), pp. 3-38. [2] Darrigol, O. The Mystery of Riemann's Curvature, Historia Mathematica 42 (2015), pp. 47-83. (Received September 21, 2017)