Abstract: For any fundamental discriminant $D > 0$, Hirzebruch and Zagier constructed a modular form of weight two whose Fourier coefficients are corrections of the Hurwitz class number sums $\sum_{r^2 \equiv 4n(D)} H((4n - r^2)/D)$. In this talk, we will discuss how one can reinterpret their result and remove the condition that $D$ is fundamental by working instead with vector-valued modular forms for Weil representations.