This talk concerns singular values of $M$-fold products of i.i.d. right-unitarily invariant $N \times N$ random matrix ensembles. As $N$ tends to infinity, the height function of the Lyapunov exponents converges to a deterministic limit by work of Voiculescu and Nica-Speicher for $M$ fixed and by work of Newman and Isopi-Newman for $M$ tending to infinity with $N$. In this talk, I will show for a variety of ensembles that fluctuations of these height functions about their mean converge to explicit Gaussian fields which are log-correlated for $M$ fixed and have a white noise component for $M$ tending to infinity with $N$. These ensembles include rectangular Ginibre matrices, truncated Haar-random unitary matrices, and right-unitarily invariant matrices with fixed singular values. I will sketch our technique, which derives a central limit theorem for global fluctuations via certain conditions on the multivariate Bessel generating function, a Laplace-transform-like object associated to the spectral measures of these matrix products. (Received August 24, 2019)