Using Howe’s reductive dual pair philosophy, we study the branching multiplicity spaces for the irreducible representations of the complex general linear group $GL_n$ under its restriction to $GL_{n-2}$. These spaces admit hidden symmetries extending the natural $GL_2$-action, namely, the Yangian $Y(gl_2)$ and the $(n - 1)$-fold product of $sl_2$’s. We connect the combinatorial description of the branching multiplicity spaces in terms of Gelfand–Tsetlin patterns with explicit formulas for differential operators realizing the hidden symmetries. (Received August 17, 2012)