Let $L$ is a homotopy Lie algebra with invariant trace. It is shown that this is equivalent to the existence of a module structure over a cobordism category of 3-manifolds and that its Lie algebra homology corresponds to a enlargement of this category. Consequences of this include an action of 3-manifold cobordisms on the graph homology associated to an operad and $H^{*-1}(X, T_X \otimes A)$ of a complex manifold $X$ with coherent sheaf $A$ of $\mathcal{O}_X$ modules. (Received September 15, 2008)