It is known since the pioneering works of Jorgensen and Thurston in the late 70s that many hyperbolic 3-manifolds fiber over the circle; more recently, Agol and Wise proved that they all do virtually. This surprising phenomenon is in fact not confined to dimension 3: some examples exist also in dimension 5. The 4-dimensional fibers that arise are quite mysterious, with elusive topological and geometric properties. This is joint work with Italiano and Migliorini.