Søren Galatius

of Stanford University will be speaking on

Homological stability for moduli
spaces of high dimensional manifolds

on September 10 at 4:30 in
MIT Room 2-131

I will discuss recent joint work with Oscar Randal-Williams concerning the manifolds $W_{g}^{2n}$ obtained as the connected sum of $g$ copies of $S^{n} \times S^{n}$. For $n = 1$ this is a genus $g$ surface, and there is a moduli space $M_{g}$ parametrizing smooth surface bundles with genus $g$ fibers. For higher $n$ there is an analogous moduli space $M_{g}^{n}$ parametrizing smooth fiber bundles with fibers $W_{g}$ (although for $n > 1$ it is no longer finite dimensional). We prove that for $n > 2$ the cohomology groups $H^{k}(M_{g}^{n})$ are independent of $g$ as long as $g \gg k$, generalizing a result of John Harer and others for $n = 1$. 