1085-51-260 **Raquel Perales*** (praquel@math.sunysb.edu) and **Christina Sormani**. *"Sequences of Open Riemannian Manifolds with Boundary"*.

Gromov proved that sequences of compact manifolds, M_j^m, with a uniform upper bound on their diameters and $Ricc \geq 0$ have subsequences which converge in the Gromov-Hausdorff sense. If there is a sequence of balls $B(p_j, r) \subset M_j$ with a uniform lower bound on volume, we say the sequence is noncollapsing and Colding has proven the volume converges.

This is false for open manifolds with boundary, as can be seen by taking k-fold covering spaces of $Ann_{1/k,1}(0) \subset \mathbb{E}^2$, which are flat spaces with diameter $\leq 2 + \pi$ and volume $k(\pi 1^2 - \pi(1/k)^2)$ diverging. With my doctoral advisor, Christina Sormani, we have proven that if M_j^m is a noncollapsing sequence of open manifolds with boundary with $Ricc \geq 0$, a uniform upper bound on volume and a uniform upper bound on the intrinsic diameter of

$$M_j^\delta = \{x \in M_j : d_{M_j}(x, \partial M_j) > \delta\}$$

, then a subsequence of M_j^δ converge in the G-H sense with respect to the restricted metric. We are currently exploring the properties of the limit space. Prior research on the convergence of manifolds with boundary imposing conditions on the curvature of the boundary has been conducted by Wong and by Kodani. Here we do not even require a smooth boundary. (Received September 11, 2012)