1081-13-136 **Juan C. Migliore*** (migliore.1@nd.edu) and **Uwe Nagel** (uwe.nagel@uky.edu). *Numerical Macaulification.* Preliminary report.

An unpublished example due to Joe Harris from c. 1983 gave two smooth space curves with the same Hilbert function, one arithmetically Cohen-Macaulay (ACM) and the other not. Starting with any homogeneous ideal in any number of variables, we give two constructions, each of which produces an ideal with the Hilbert function of a codim. 2 ACM subscheme. We call such a subscheme "numerically ACM," and call such a construction a "numerical Macaulification" of the original ideal. We study the connections between these two constructions, and show that they produce ideals with the same Hilbert function. Specializing to the case where the original ideals are unmixed, codim. 2, we show that (a) every even liaison class, $\mathcal{L}$, contains numerically ACM subschemes, (b) the subset, $\mathcal{M}$, of numerically ACM subschemes in $\mathcal{L}$ has, by itself, a Lazarsfeld-Rao structure, and (c) if we begin with a minimal element of $\mathcal{L}$ and apply either construction, the result is a minimal element of $\mathcal{M}$. Finally, for curves in $\mathbb{P}^3$, the even liaison class of curves with Hartshorne-Rao module concentrated in one degree and having dimension n contains smooth, numerically ACM curves, for all $n \geq 1$. The first (and smallest) such example is that of Harris. (Received February 07, 2012)