

# GEOMETRIC ANALYSIS SEMINAR

**“CMC surfaces and CSC metrics with cylindrical ends”**

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Abstract: About 30 years ago, Rick Schoen asked whether a complete, properly embedded (nonzero) constant mean curvature (CMC) surface in  $\mathbb{R}^3$  with finite total absolute curvature must be the sphere or the cylinder. By an equally old result of the speaker (with Nick Korevaar and Bruce Solomon), this question is equivalent to asking whether all its ends can be asymptotically cylindrical. After reviewing necksize bounds for CMC surfaces (suggesting a "Yes" answer), and some experiments (suggesting a "No"), we'll discuss our ongoing work (with Jeremy Leach and Rafe Mazzeo) that constructs such CMC surfaces, as well as our analogous construction for complete metrics with (positive) constant scalar curvature (CSC) on locally conformally flat manifolds (of dimension at least 3).

**Thursday, October 13<sup>th</sup>, 2016  
MIT, Room 4-153  
Time: 4:00 PM**

