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Ian Agol* (ianagol@berkeley.edu), University of California, Berkeley, 970 Evans Hall 3840, Berkeley, CA 94720-3840. *Progress in 3-manifold topology and geometric group theory*. Preliminary report.

We'll discuss recent results regarding 3-manifolds and their fundamental groups. More specifically, we'll discuss finite-sheeted covers of compact 3-manifolds admitting various properties, and how these are interpreted in terms of properties of the fundamental group, such as residual finiteness and linearity. We'll survey some of the ingredients in geometric group theory used to resolve these questions, in particular CAT(0) cube complexes and hyperbolic groups, and the progress made in their study by Dani Wise and his collaborators. (Received April 28, 2014)