Direct Relief Integration for Higher Optical Performance: DRI-HOP your geologic map

As serious beer drinkers (and thus most geologists—see Venn diagram) know, dry-hopping is a technique that makes better beer: more varied, more subtle flavors can be attained by adding a second round of dry hops to the wort after it has been cooked. Dry-hopping costs more—hops are expensive—but the beer is worth it!

Similarly, DRI-HOPping your geologic map costs more computation time, but I think you will agree that the results are worth it!

The problem: Colored unit polygons on shaded relief are easily made by adjusting the transparency in the Display tab in the ArcMap layer properties window. Either semi-transparent colored unit polygons over shaded relief, or semi-transparent shaded relief over colored unit polygons, the result is the same. ArcMap appears to implement this superposition by averaging the two images**. The result is to reduce the gamut of the composite image.**

DRI-HOPping uses a bit of Map Algebra to (1) explicitly scale and shift the gray values of a shaded-relief image and then (2) directly subtract the resulting less-than-white values from the R, G, and B components of the colored unit polygons. **The result is to give you explicit control over the gamut of the composite image. You can have crisper shaded relief and more vibrant colors** (or not)**!**