A Duke Mathematics professor and her students have been working on a project with the North Carolina Museum of Art to display some 14th Century paintings as they would have been when new. They know how to simulate paint and how to (virtually) remove the cracks in the paint, but are not experienced in computer graphics and don't know how to render the gold leaf, so have asked us to participate.

The paintings came from an altarpiece in Italy (above) and are held by various museums around the country. One panel is missing, but has been recreated by an expert in period paints and Medieval art. The exhibition will bring together the original paintings and the new one. There will also be exhibits on the mathematical and computer-science techniques used.

This class project is to render an animation of the original paintings as they would have looked when new. Specifically, the gold leaf and the punched-in 3D detail (see the detail photos below, original left). Professor Lastra (lastra@unc.edu) will help with the rendering equations and techniques. The animations will be shown as part of the exhibition at the North Carolina Museum of Art. Of course, all participants in the project will be credited at the exhibition. There is also a possibility of some work over the summer.