



# Seeing Beneath the Surface

Infrared Spectroscopy Analysis of  
Paintings from the Mount Holyoke  
College Art Museum

Spring 2012

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Chemistry 325:  
Atomic and Molecular Structure

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Taught by Himali Jayathilake  
and Maria Gomez

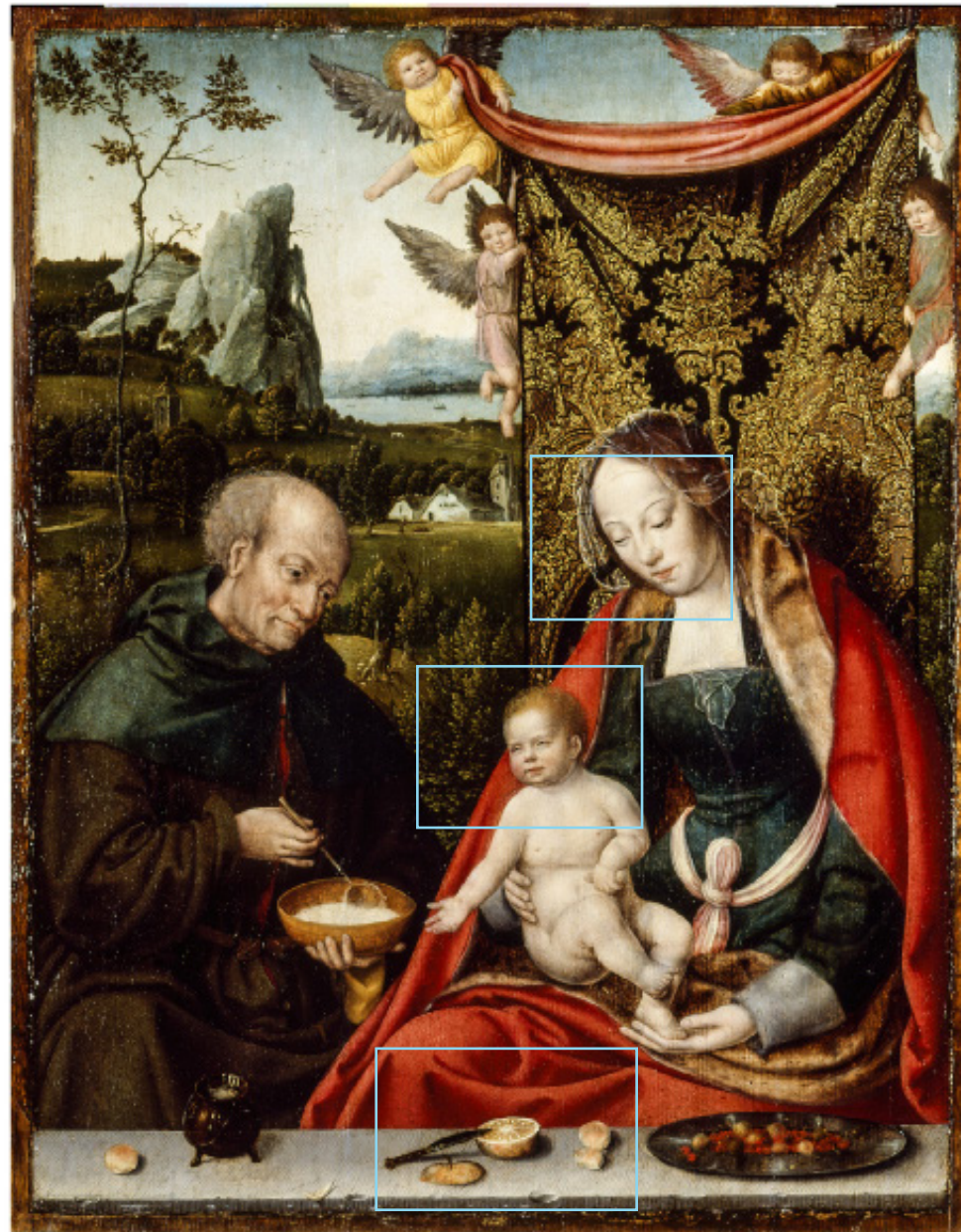
MOUNT HOLYOKE COLLEGE ART MUSEUM

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Chemistry 325 students analyze a Mount Holyoke College Art Museum painting using Infrared Spectroscopy



The Holy Family by Joos van Cleve





# The Holy Family by Joos van Cleve

IR Image

Visible Image



Face has been considerably modified in the current version of the painting. Position of nose and mouth has changed.



Baby's shoulder was enlarged. This last change can be observed in the actual painting itself.



The bread was enlarged in the final version and we can see the smaller version in the IR picture on the left.

Autumn Landscape by William Sonntag



# Autumn Landscape by William Sonntag

IR Image



Visible Image



Birds were painted over in the final version, but the birds can be seen in the IR version.



Hidden signature can be seen under IR light.

Steel (America Today Murals) by Thomas Hart Benton





# Steel (America Today Murals) by Thomas Hart Benton

IR Image

Visible Image



The sketches for the figures and gridlines can be seen where the artist sketched out his figures.



Grid lines can additionally be seen in this painting. Other portions of this painting show circles for head sketches as well as general body forms.





Christ in the House of Mary and Martha  
by Gianbattista Bassano



# Christ in the House of Mary and Martha by Gianbattista Bassano

IR Image

Visible Image



In the IR image, the grapes are not visible. This indicates that they were probably painted at a later time or IR light could penetrate through the type of paint used to draw grapes.



In the IR image, part of napkin can not be seen on the bench.