



The Use of Art History in the Study of Histology Images by Medical Students

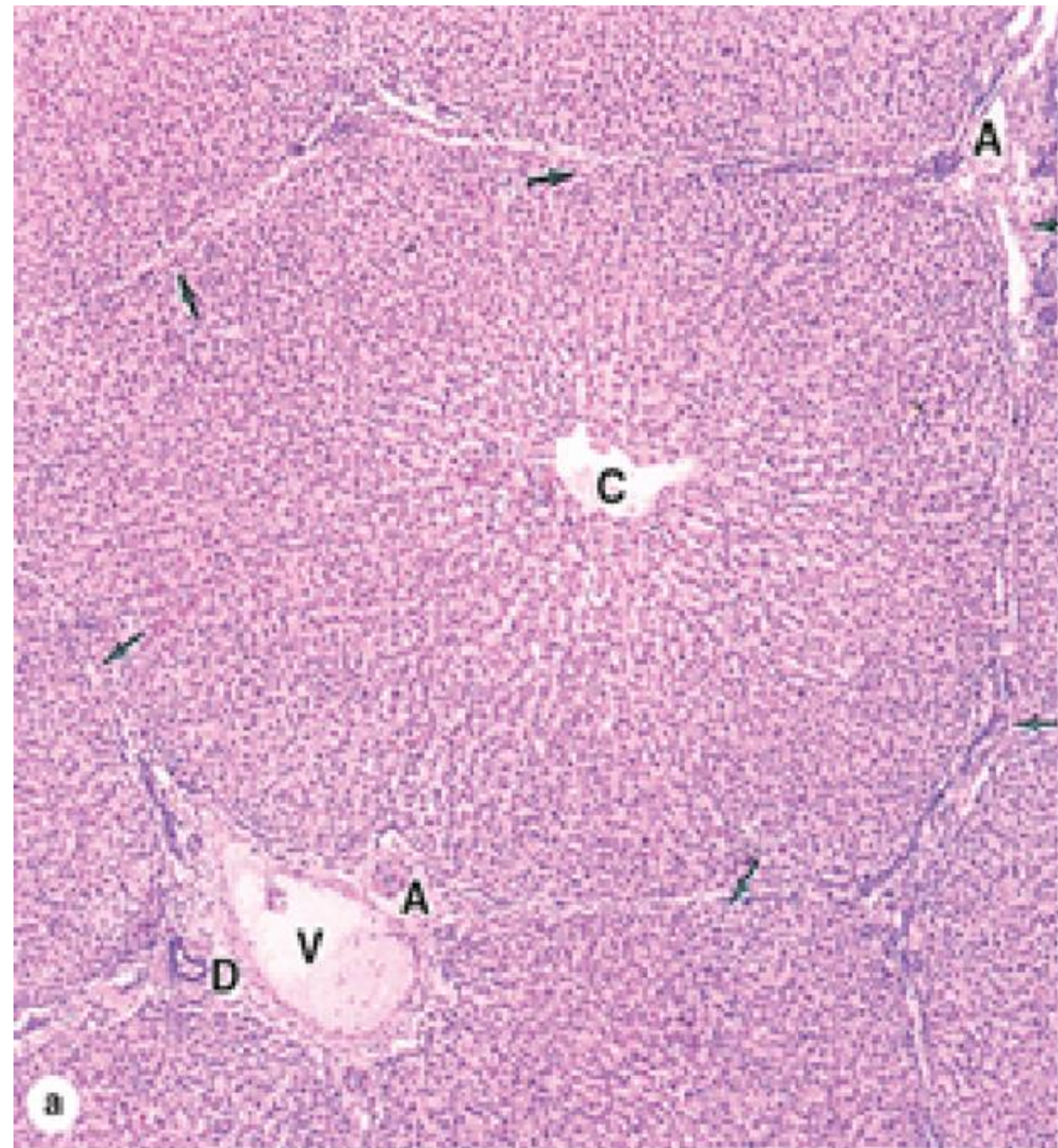
Madeleine Karpiuk¹, Ashley Zmau¹ Tipsuda Bahri¹, and Esther Nuebel^{1,2,3}

¹ Noorda College of Osteopathic Medicine, Biomedical Science, Provo, UT, USA

² Roseman University of Health Sciences, College of Medicine, South Jordan, UT, USA

³ University of Utah, Salt Lake City, School of Medicine, Biochemistry, UT, USA

The Gallery – An Example Selection



Source: Anthony L. Mescher:
Junqueira's Basic Histology Text and Atlas, 16e
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Hepatic lobule.

Cut transversely, hepatic lobules are polygonal units showing plates of epithelial cells called hepatocytes radiating from a central venule (C). Peripheral connective tissue of portal areas contains the portal triad: small bile ductules (D), venule (V) branches of the portal vein, and arteriole (A) branches of the hepatic artery. Chapter 16 Organs Associated with the Digestive Tract, Mescher AL. Junqueira's *Basic Histology Text and Atlas*, 16e; 2021.

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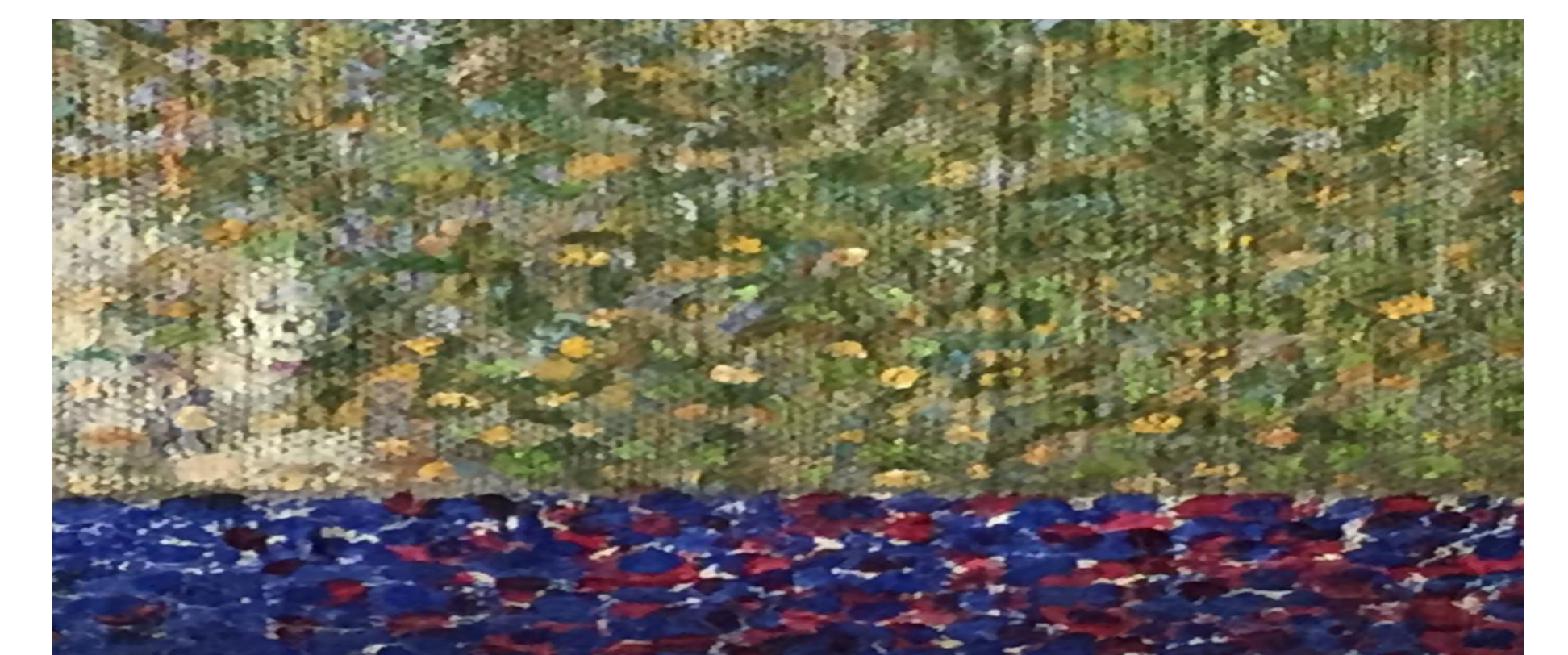


Georges Seurat, *A Sunday on La Grande Jatte*, 1884-1886. Oil on canvas, 6' 9" x 10'. Art Institute of Chicago

The most famous example of Post-Impressionist Pointillism Style. The entire canvas is composed of single daps of paint and when viewed at a distance makes up a cohesive composition. Pointillism in comparison to other forms of painting in the late 19th century is very rigid with little fluidity to the brushstrokes.



Top: Detail of Monkey and Dog



Bottom: Frame detail from bottom left corner (rotated)

The scientific advances of the 19th century gave rise to the study of the human eye and how color is perceived. These details show examples of how Color Theory could be used to make lights colors appear lighter when contrasted with a darker color of the same hue.

PURPOSE

The education of medical students in the United States has only recently begun to mirror the innovation seen in the medical field. Our research takes the different learning environment of art history, the gallery, and the juxtaposition of familiar works of art with histology slides and tests if the “unusual” manner of presentation increases confidence with later identifying the material.

Gallery Text: Making Visual Connections

The obvious connection between these two images in the pointillism style. The hepatic lobule like the brushstrokes, are rigid with the easily defined polygonal shape. The bright white central venule (C), like the little girl in the center of the painting holding the hand of the lady dressed in red is where blood will drain from the hepatocyte and eventually reach the inferior vena cava. The three animals depicted (two dogs and a monkey) represent the portal triad. Two dogs for the two sources of blood: venule branches from the portal vein (V) and the arteriole branches of the hepatic artery (A) and the monkey, a strange pet to modern viewers representing the bile ductulus (D) that flow the opposite way.

We can remember that the function of a hepatocyte revolves around “draining” or the movement of fluids by the river in the painting, the reason for all the people to be gathered on a sunny afternoon.

METHODS

Twenty-five histological images will be selected and paired with a famous historical artwork and displayed in a gallery setting. The images will be presented with identification and explanation of the art historical significance of the artwork and how the two images are connected. Students will participate in a survey assessing their own confidence with identifying histological images before and after visiting the gallery and again in one months' time. Survey results will be analyzed with statistical analysis such as ANOVA, t-tests, and correlation analysis.

EXPECTED OUTCOMES

This study is in preparation and the gallery exhibit and questionnaires will be conducted in the Fall of 2023. Conclusions cannot be drawn yet, however, based on previous literature we expect impactful information. The findings will inform the future of medical education particularly for visual teaching disciplines, such as histology.

ACKNOWLEDGEMENTS

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References

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