

# Microscopic BioArt

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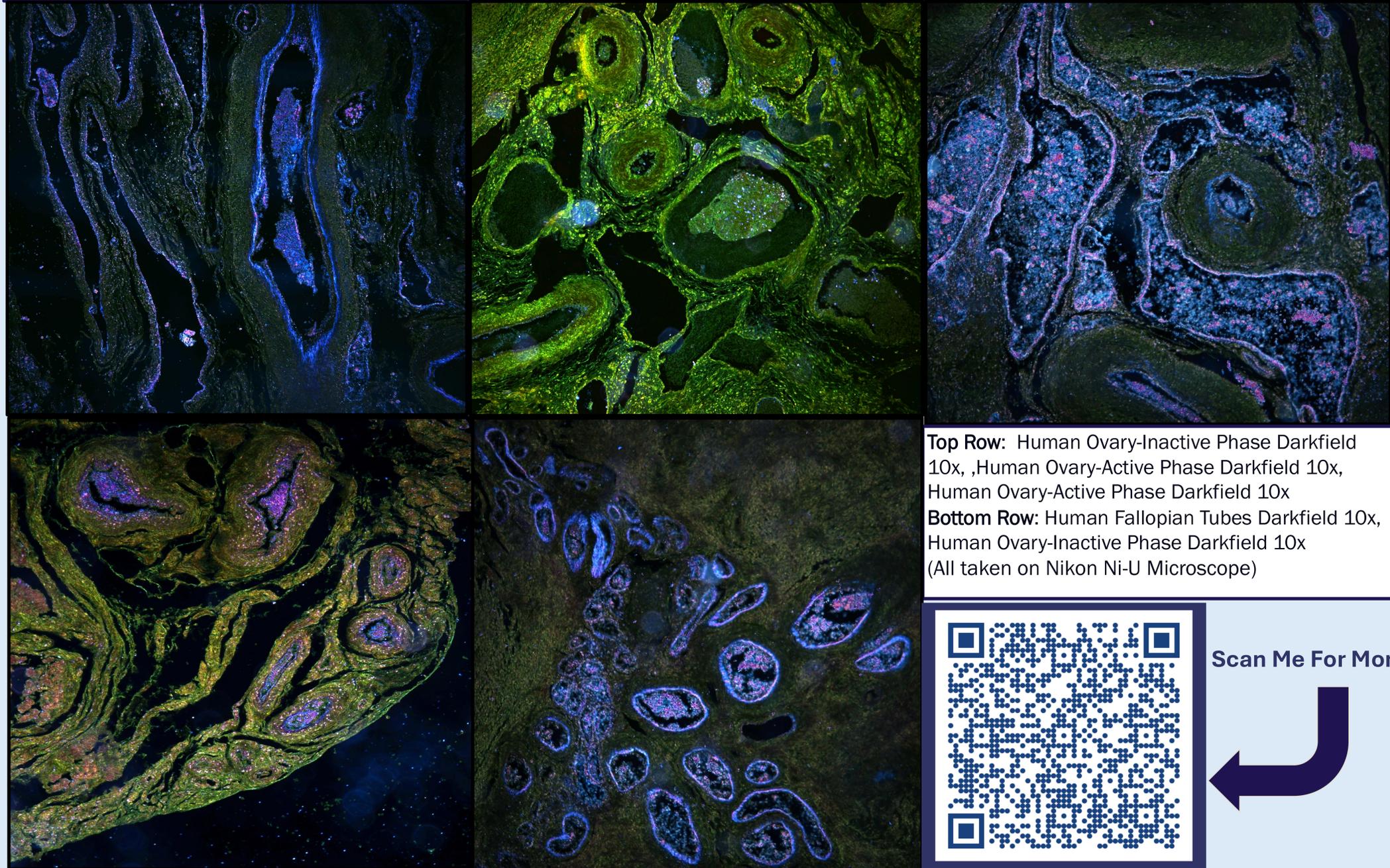
## Abstract

With the term first being coined in 1997, BioArt is a new contemporary art movement which merges biology and artistic expression, using living cells, microbes, and biochemical reactions to create visually striking compositions. The specific type of BioArt used within this project is microscopic BioArt, which consists of utilizing images captured from microscopes in an artistic setting. Beyond aesthetics, BioArt serves as a powerful tool for scientific communication, making complex biological concepts more accessible to the public. This research explores the creative potential of microscopic BioArt, demonstrating how microbial interactions and imaging techniques can inspire curiosity, bridge disciplines, and foster a deeper appreciation for the unseen beauty of life. In the series of pieces I created, I wanted to observe feminine beauty through a microscopic perspective.

## Methods

Various light microscopy techniques were used to capture various images of cell cultures and samples. During this process microscopes such as the Keyence VHX-7000, Nikon Ni-U, EVO M5000, and Leica EZ4 W Stereomicroscope. Optical microscopes transmit visible light through a sample and multiple lenses to properly visualize an image of the sample. Then, the image is photographed by a camera, allowing the captured image to be entered into photo-editing software. Dark-field microscopy is a specific technique that is often used to capture these sample images. In this process an aligned light projects through the organic sample, creating a unique color scheme in the image.

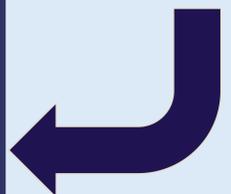
## Results



**Top Row:** Human Ovary-Inactive Phase Darkfield 10x, Human Ovary-Active Phase Darkfield 10x, Human Ovary-Active Phase Darkfield 10x  
**Bottom Row:** Human Fallopian Tubes Darkfield 10x, Human Ovary-Inactive Phase Darkfield 10x  
(All taken on Nikon Ni-U Microscope)



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## References

- Spencer, M. (1982). *Fundamentals of Light Microscopy*. Cambridge University Press
- Yetisen, A.K., Davis, J., Coksun, A.F., Church, G.M., & Yun, S. H. (2015, November 23). Bioart. *Trends in Biotechnology*.  
<https://www.sciencedirect.com/science/article/pii/S016777991500205X>

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