

Morgridge/UW-Madison

# Biomedical Imaging Seminar Series

presents

## Dr Juan Caicedo

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### HYBRID SEMINAR

Thursday, Dec 15th, 2022

Zoom Meeting ID: [881 8930 7843](#)

Zoom Passcode: [916453](#)

1:30 PM – 2:30 PM

H.F. DeLuca Forum, Discovery Building  
330 N Orchard St, Madison, WI

## ***“Strategies for learning representations of cellular morphology”***

Microscopy images are fundamental for biological research, and quantifying cellular phenotypes is at the core of numerous applications in drug discovery, functional genomics and personalized medicine. While deep learning has been successful to classify objects in natural images, its application in microscopy brings unique challenges for enabling reliable biological analysis. In this talk, two major challenges for learning representations of cellular morphology will be discussed: 1) lack of ground truth annotations for learning, 2) unwanted factors of variation that confound learning and downstream analysis. To tackle these challenges, I will present strategies based on weakly supervised and self-supervised learning, as well as approaches to correct confounding factors of variation to obtain robust representations of cellular phenotypes for biological analysis.



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