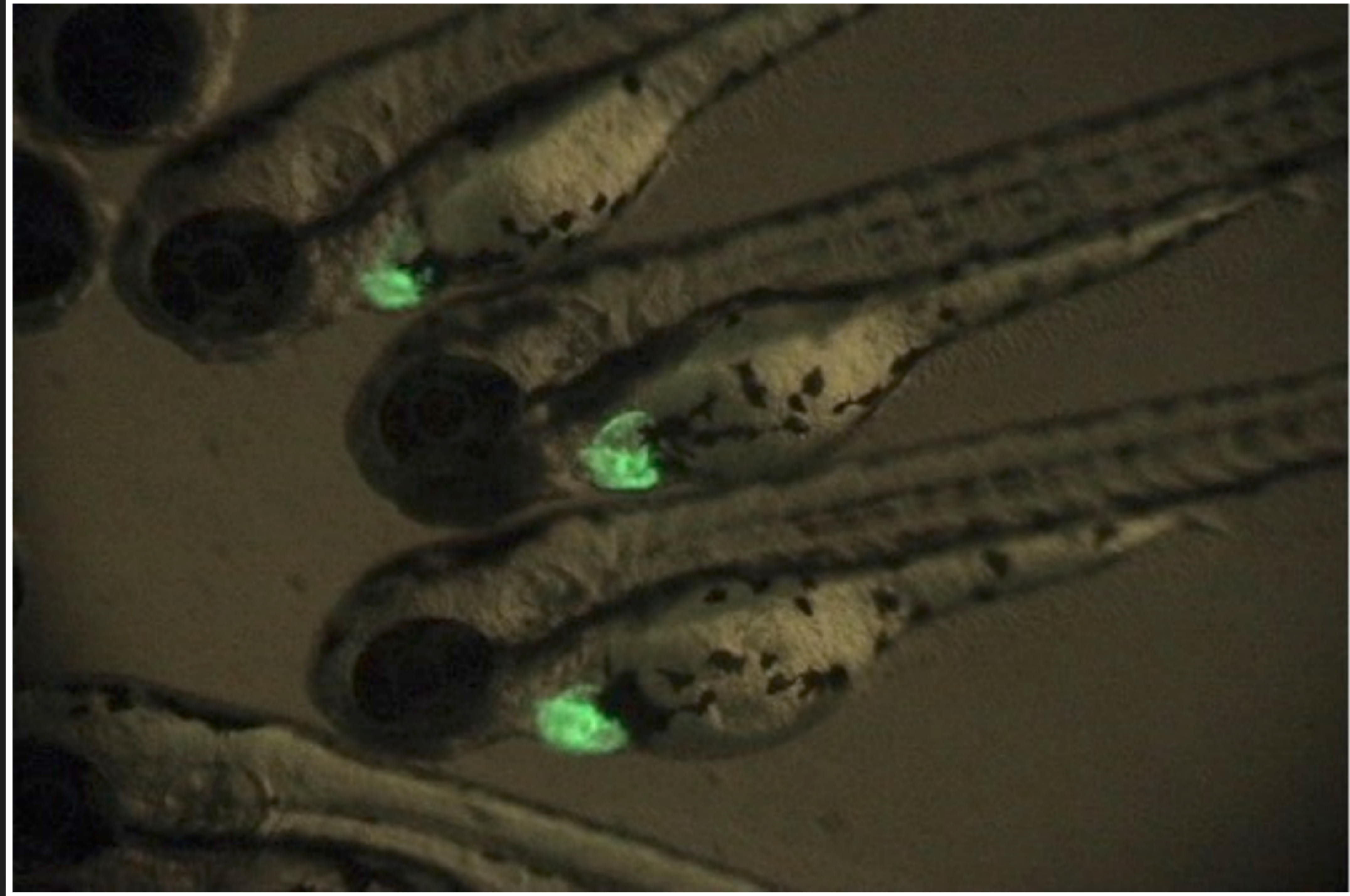


IMAGING THE DEVELOPING HEART

WHY?

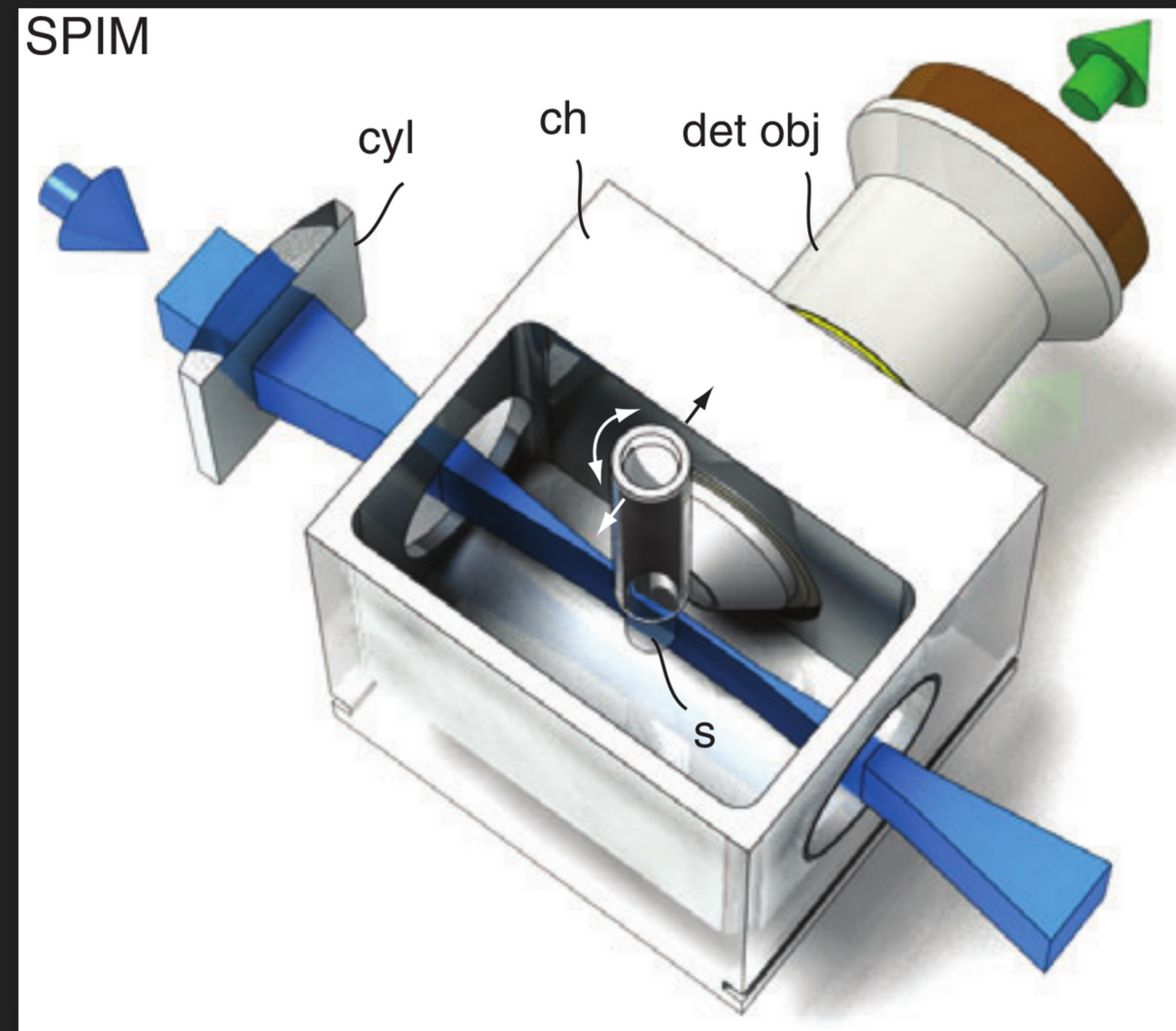


**Mending
broken
hearts
appeal**

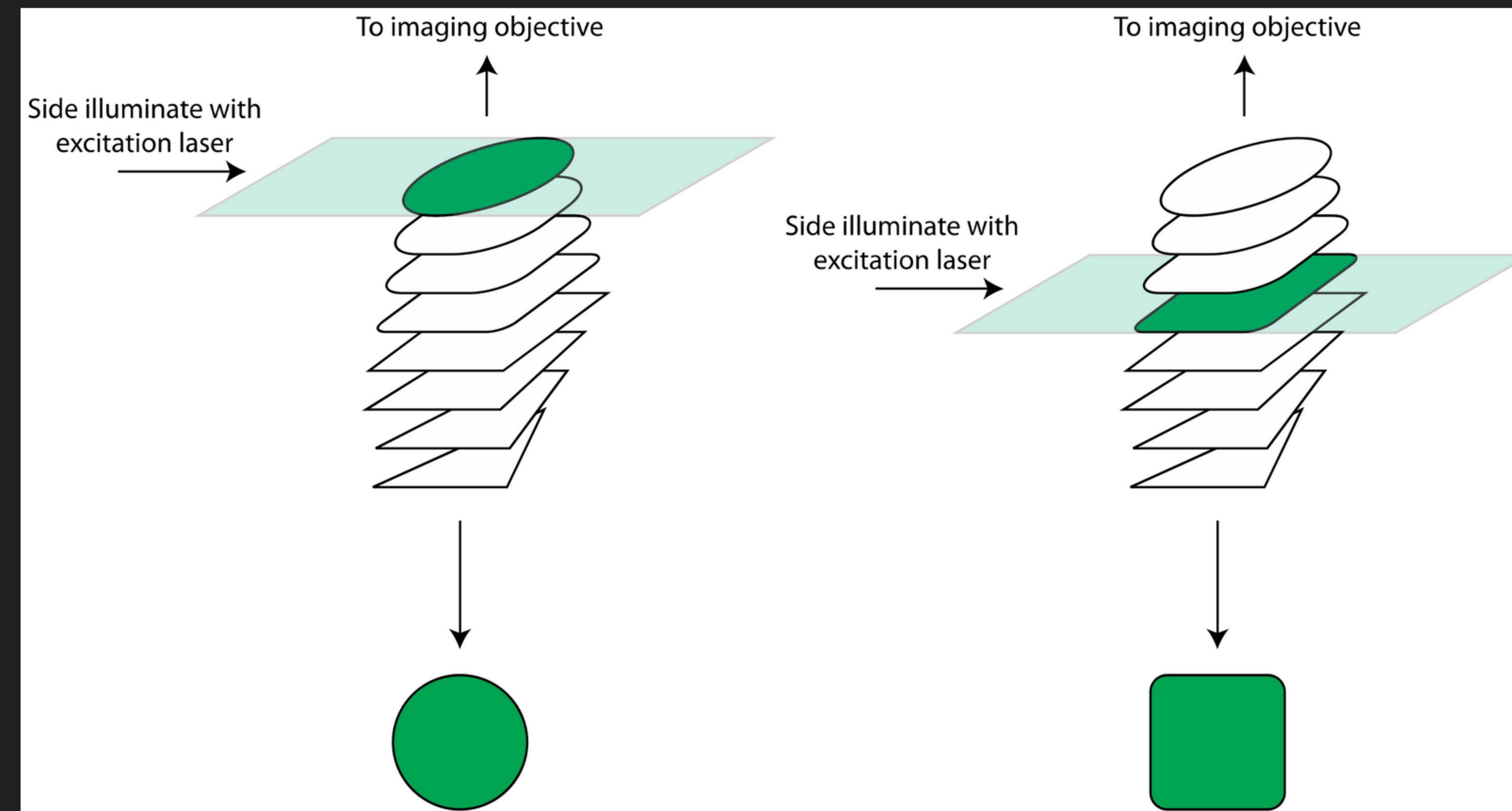




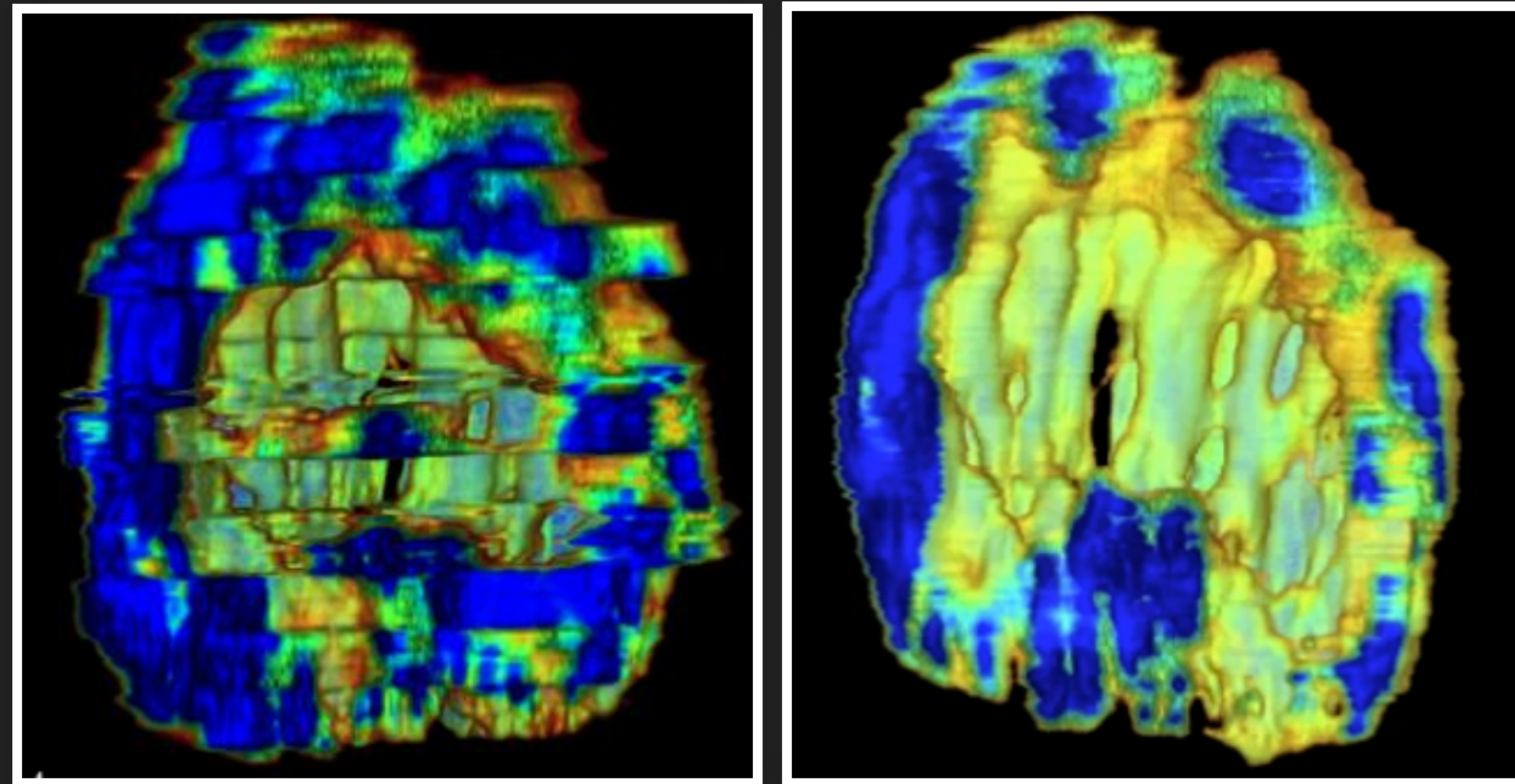
HOW?



LIGHT SHEET MICROSCOPY



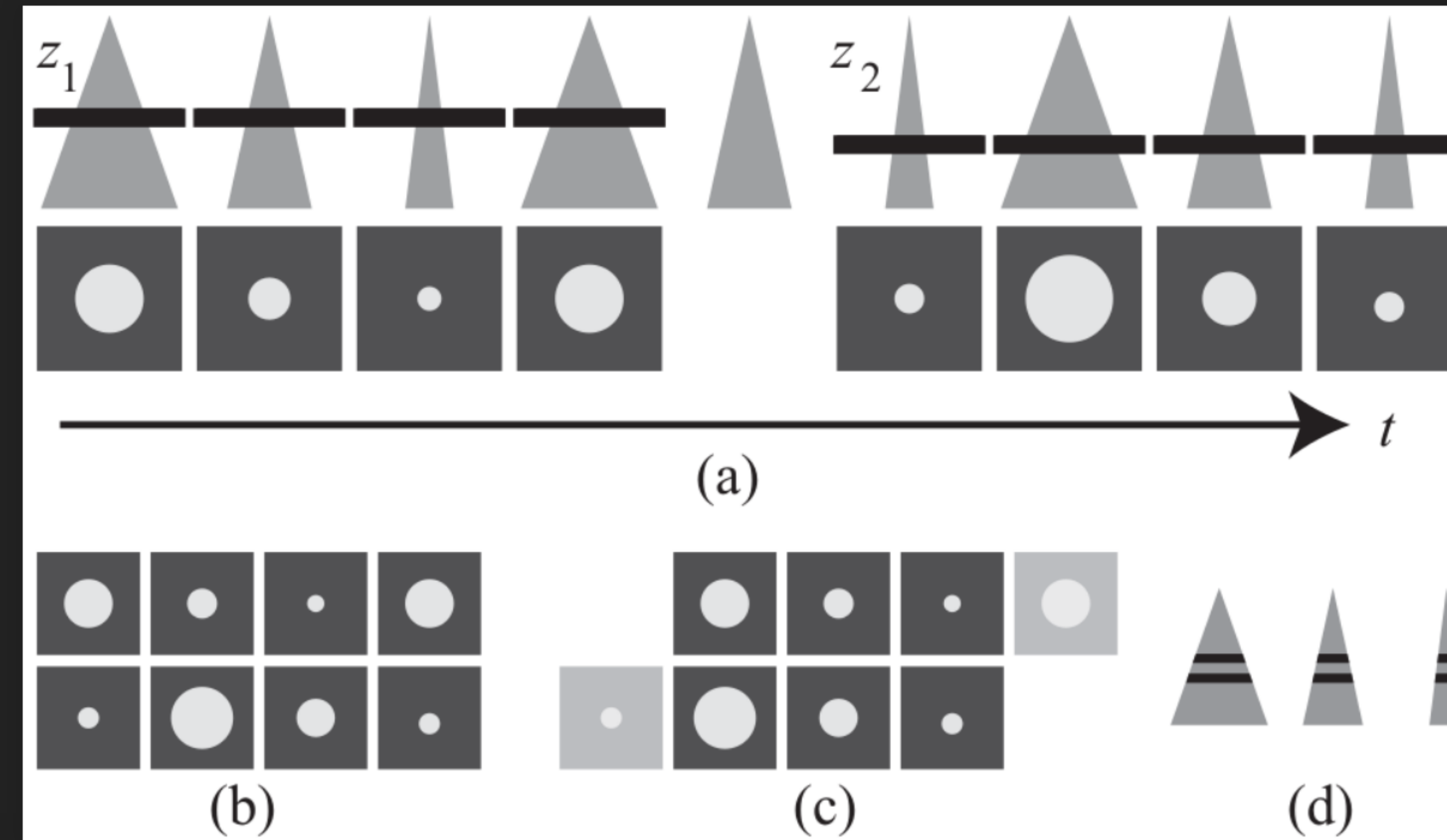
Taylor et al. Proc. of SPIE (2012)



Taylor et al. J. of Biomedical Optics (2011)

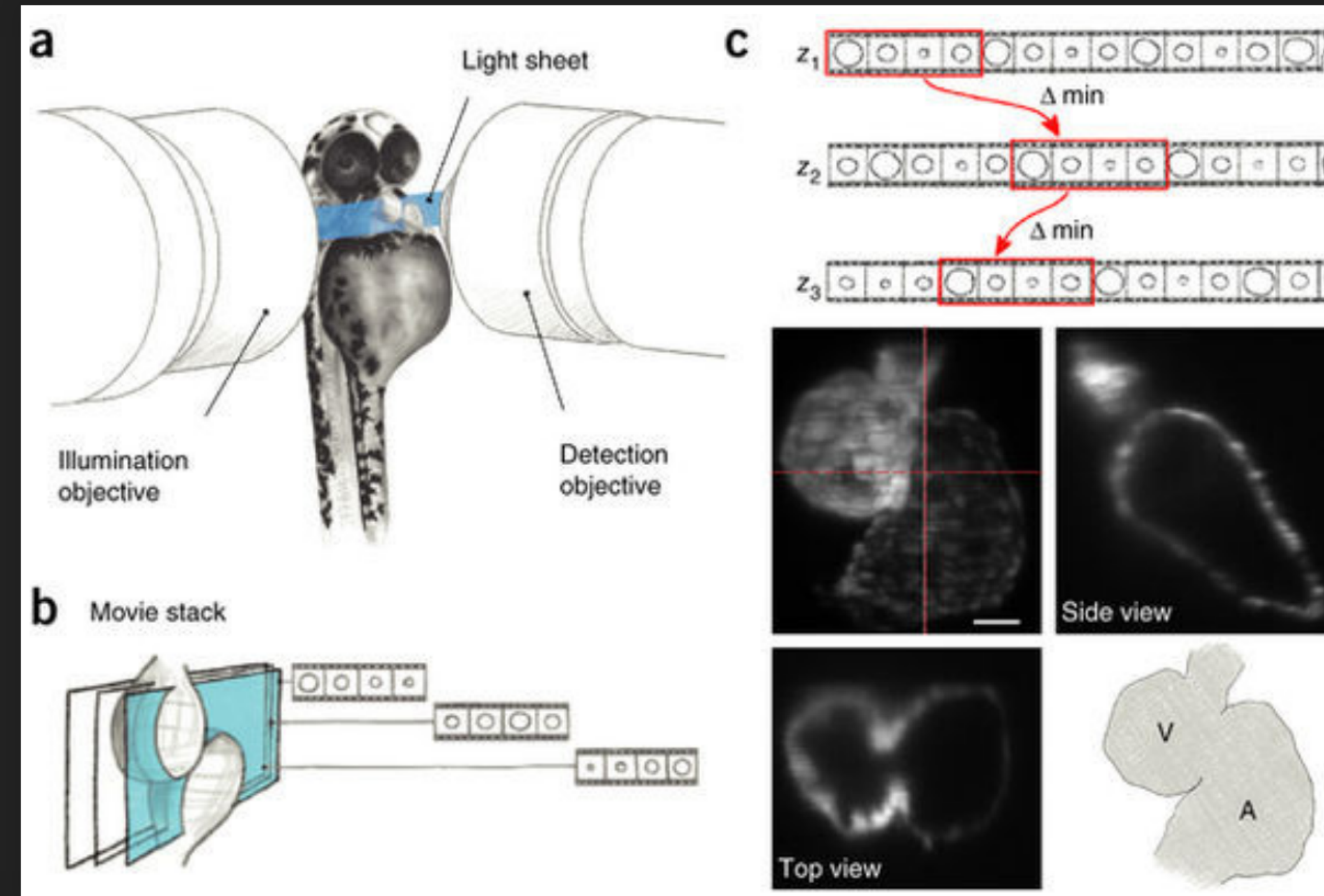
IMAGING OVER HEART BEATS (SECONDS)

RETROSPECTIVE OPTICAL GATING



Liebling et al. IEEE ISBI (2006)

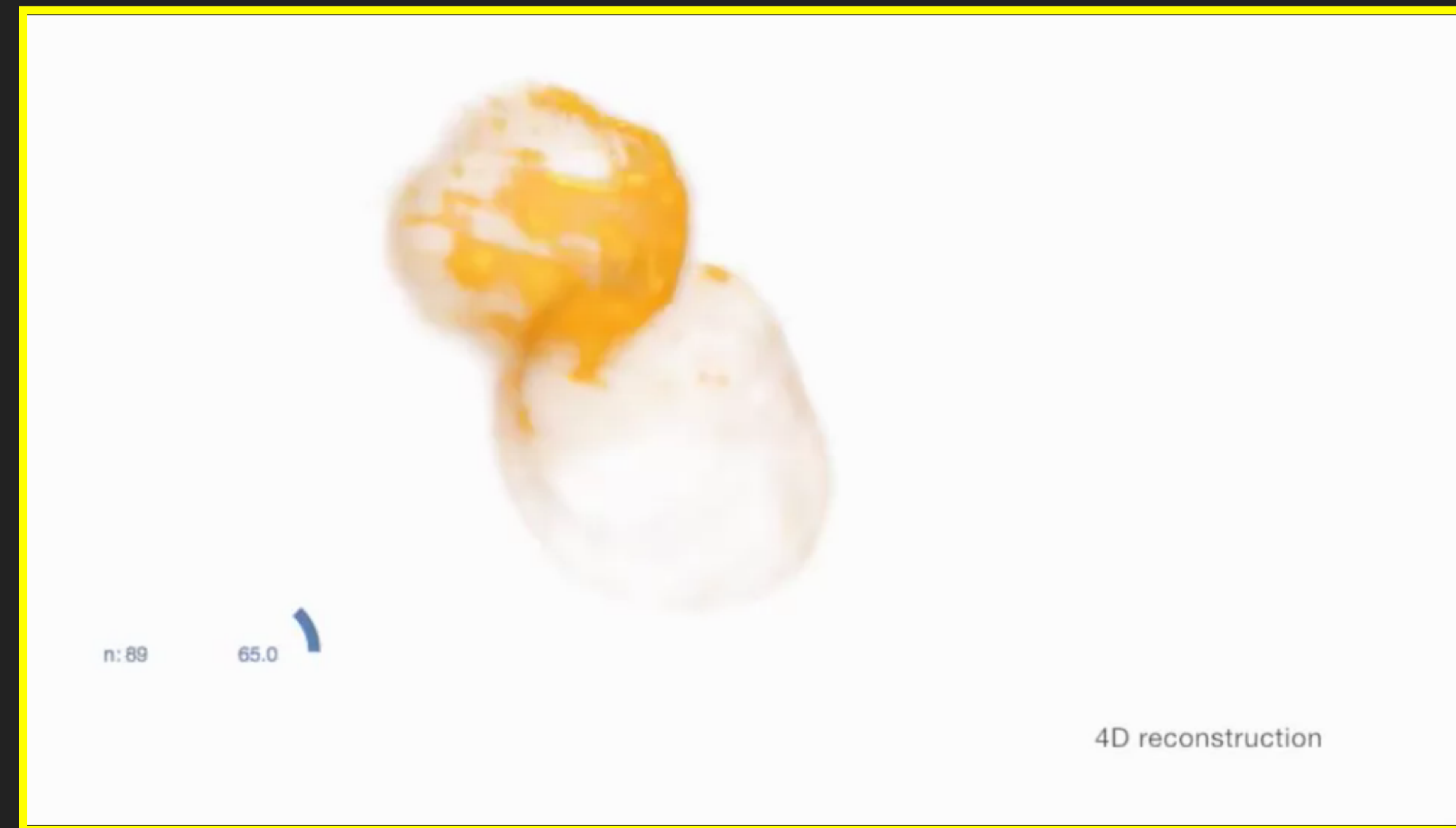
RETROSPECTIVE OPTICAL GATING



Mickoleit et al. Nature (2014)

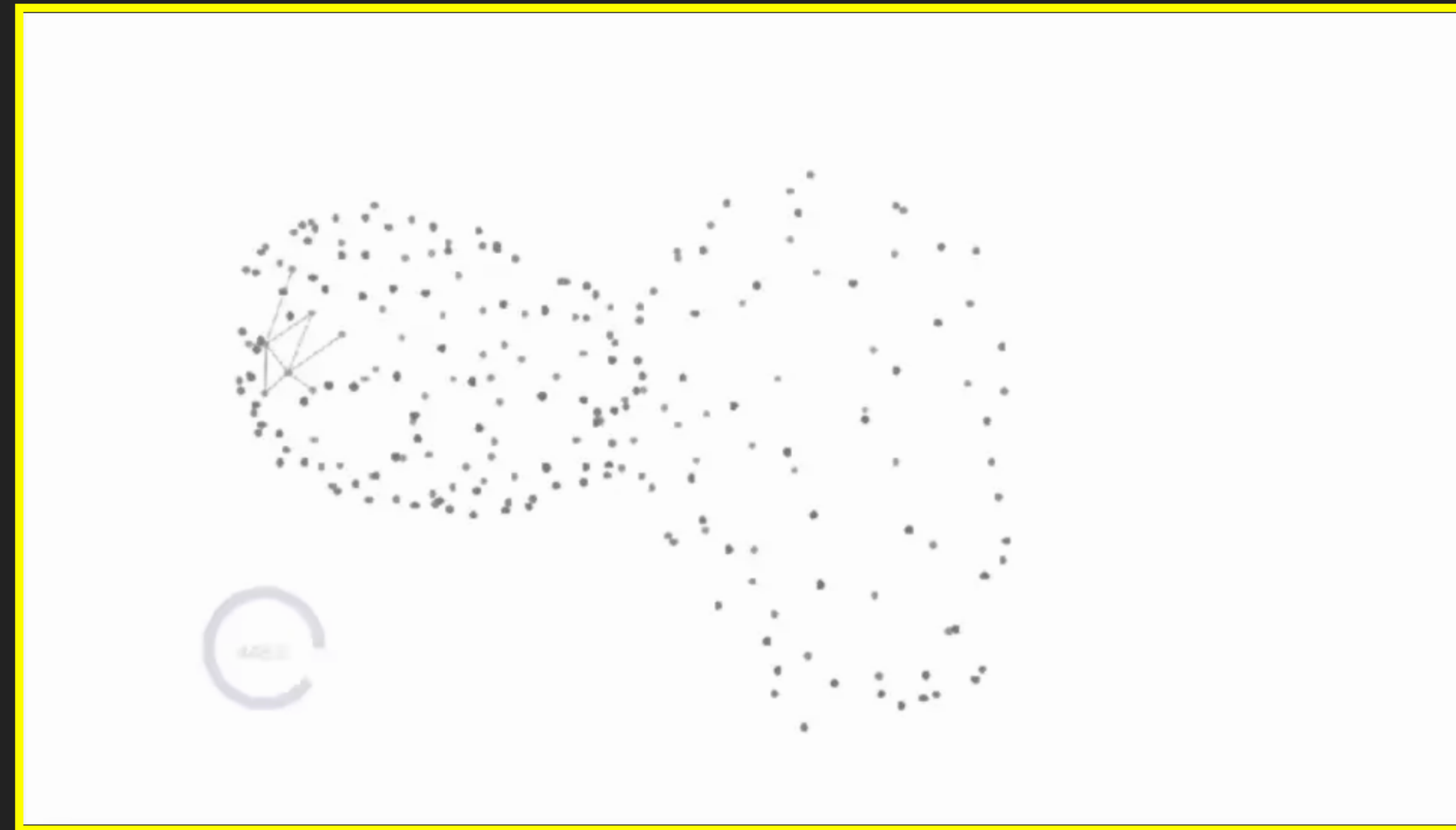
CELL-ACCURATE MAPPING

CELL-ACCURATE MAPPING



Weber et al. eLife (2017)

CELL-ACCURATE MAPPING



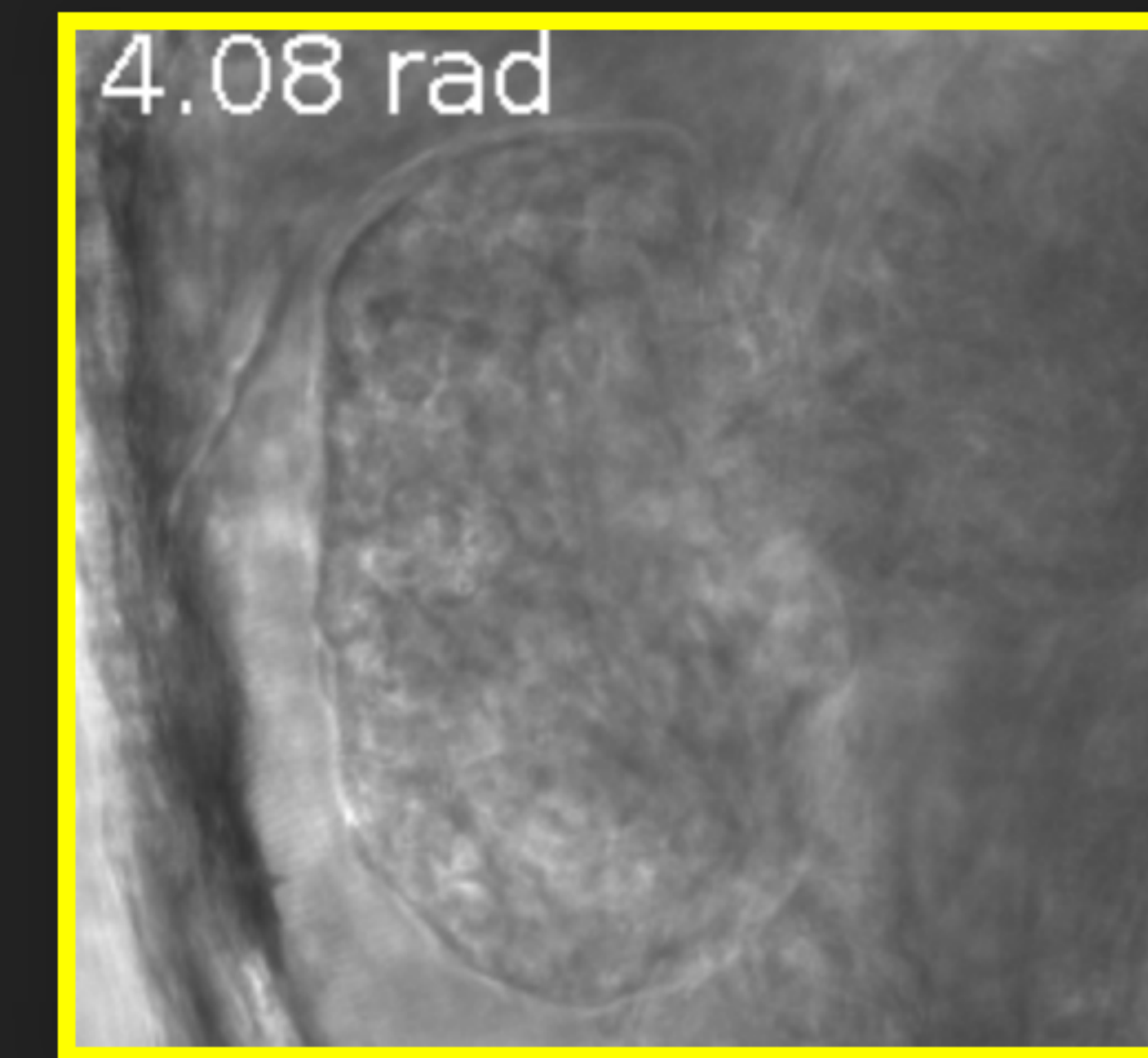
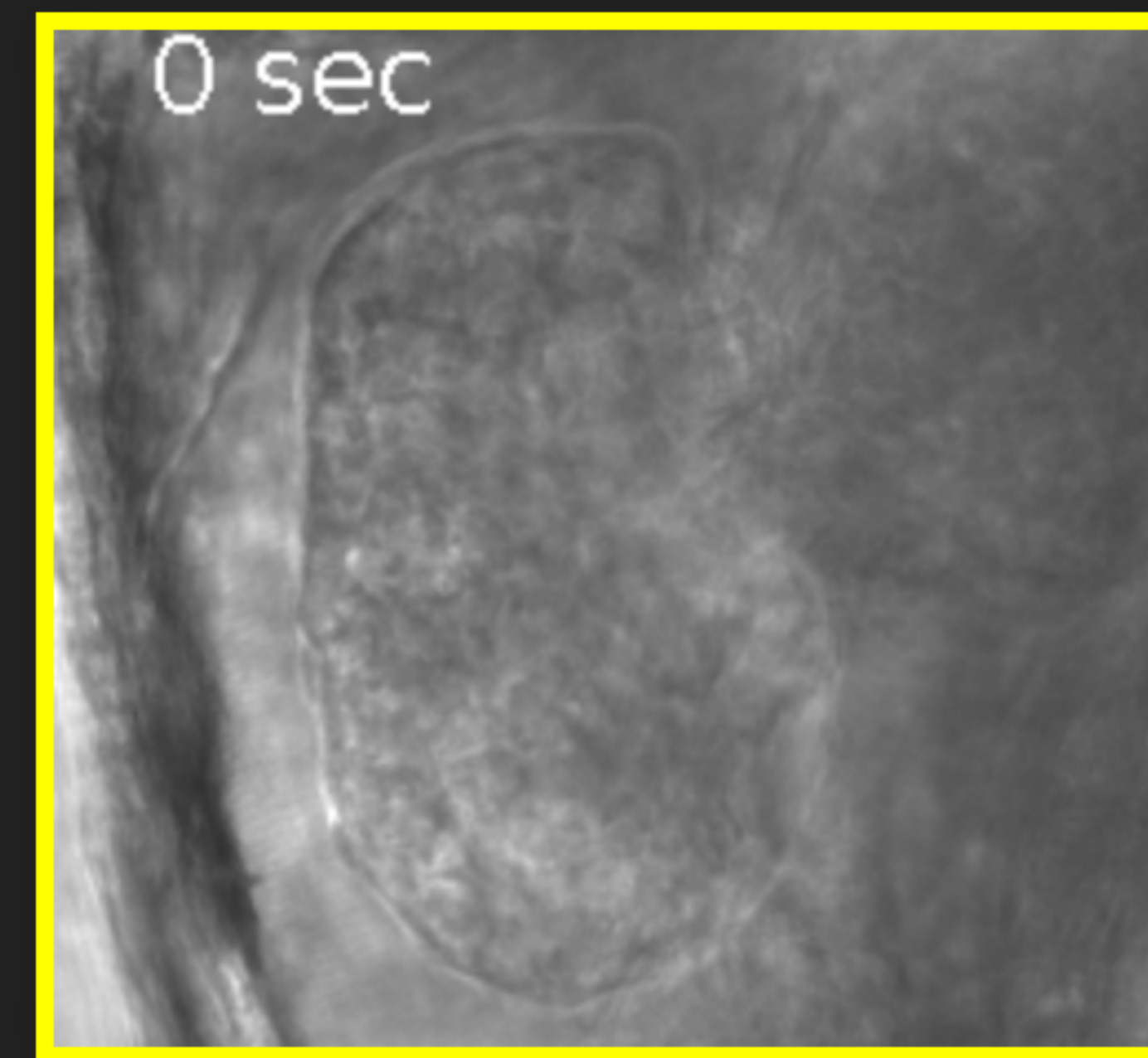
Weber et al. eLife (2017)

IMAGING OVER MINUTES

REAL-TIME PROSPECTIVE OPTICAL GATING

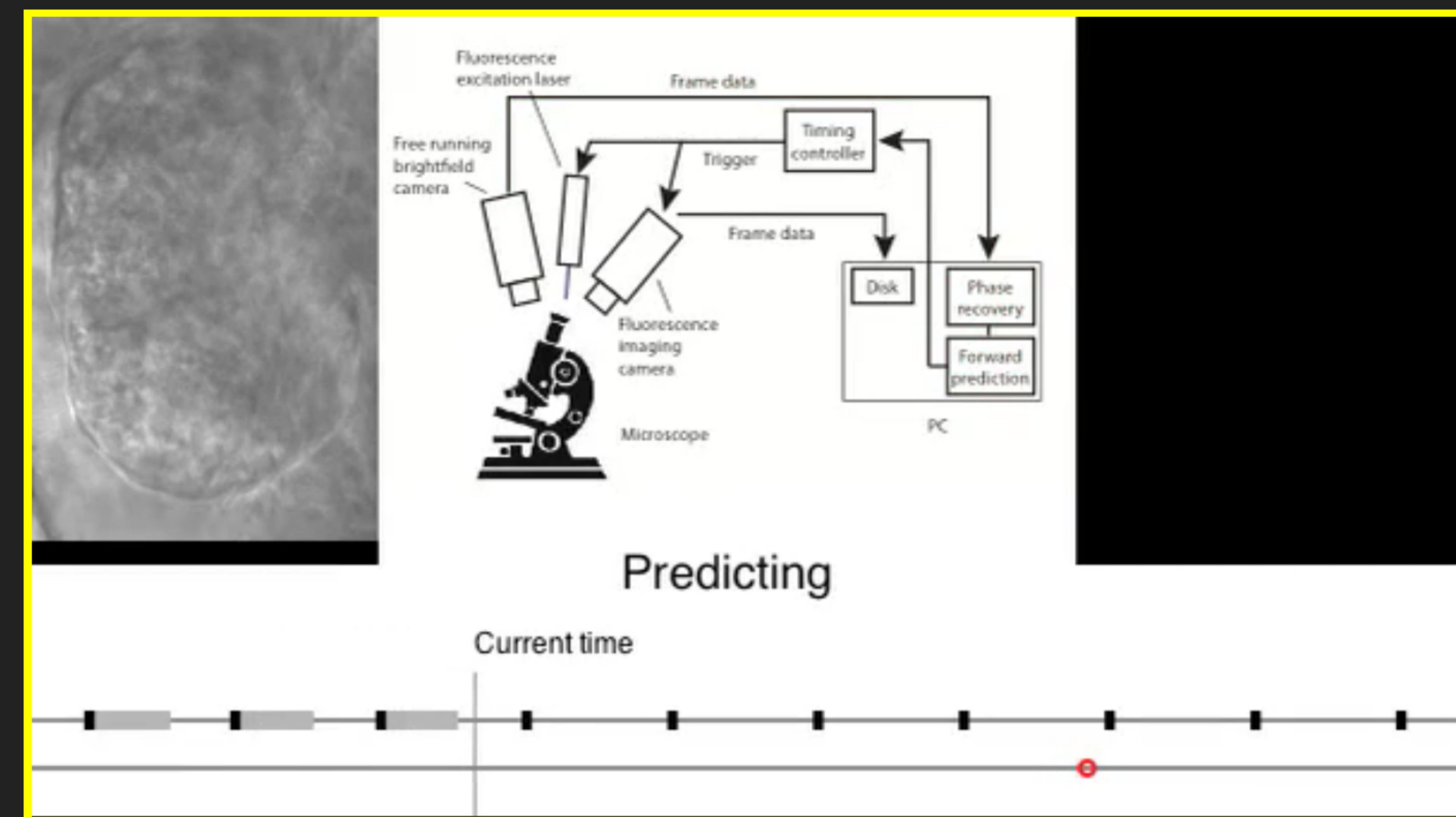
Brightfield Stream

Reference Heartbeat (0.25x)



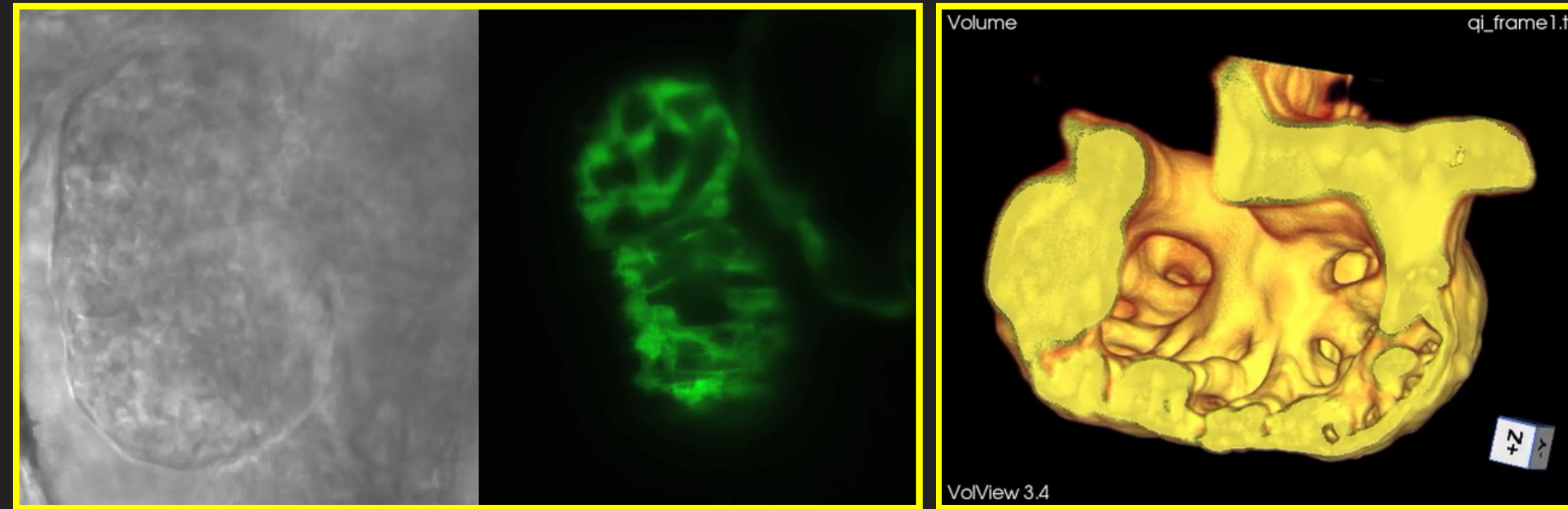
Taylor et al. J. of Biomedical Optics (2011)

REAL-TIME PROSPECTIVE OPTICAL GATING



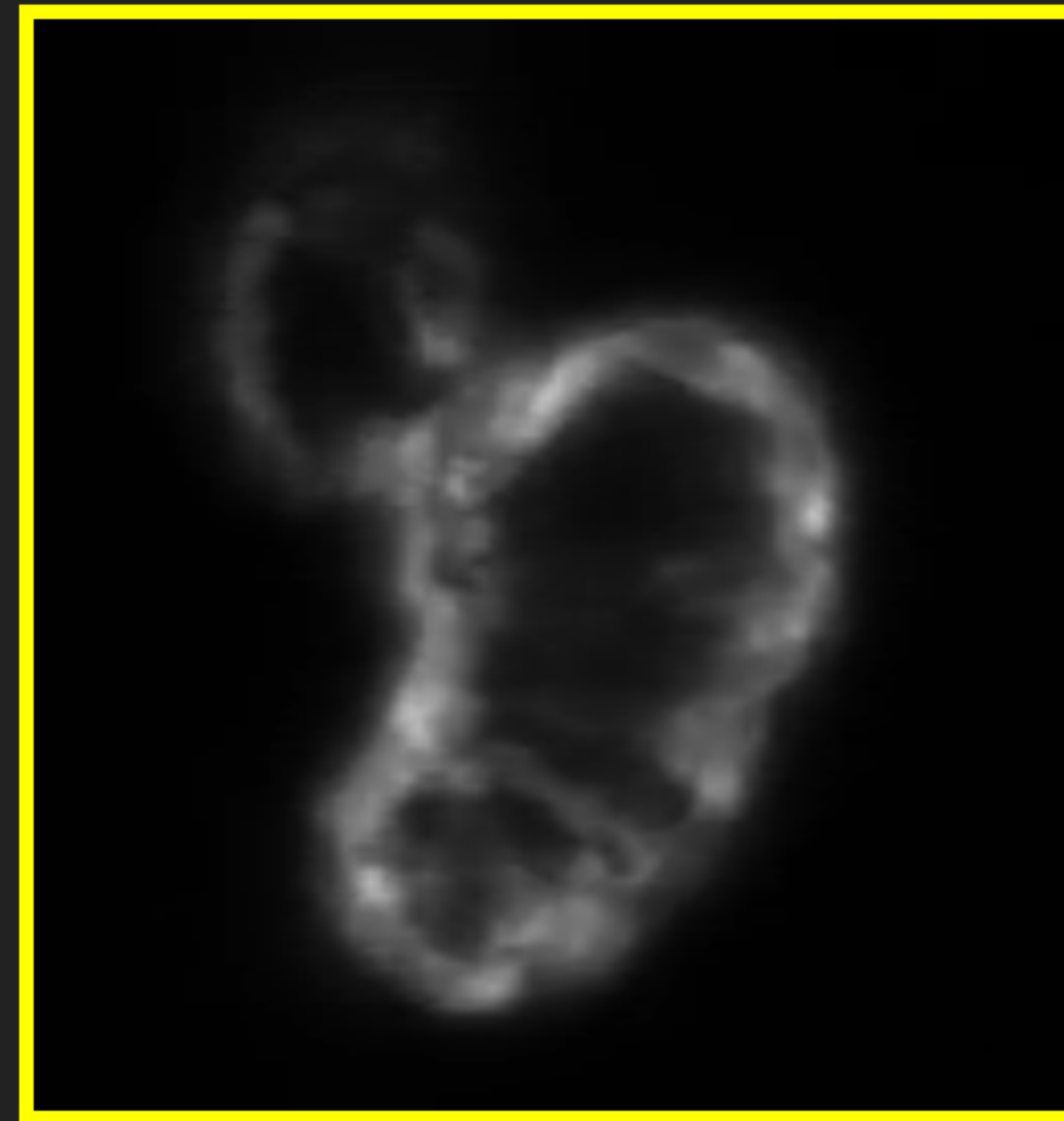
Taylor et al. J. of Biomedical Optics (2011)

REAL-TIME PROSPECTIVE OPTICAL GATING



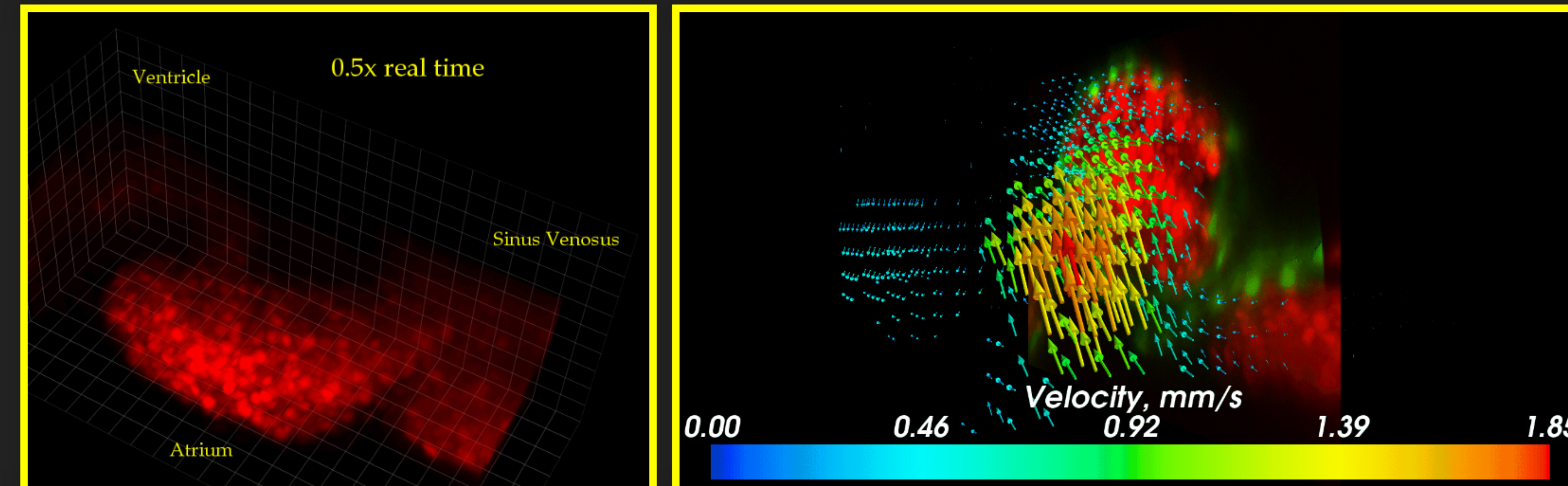
Taylor et al. J. of Biomedical Optics (2011)

COMPUTATIONAL FREEZING



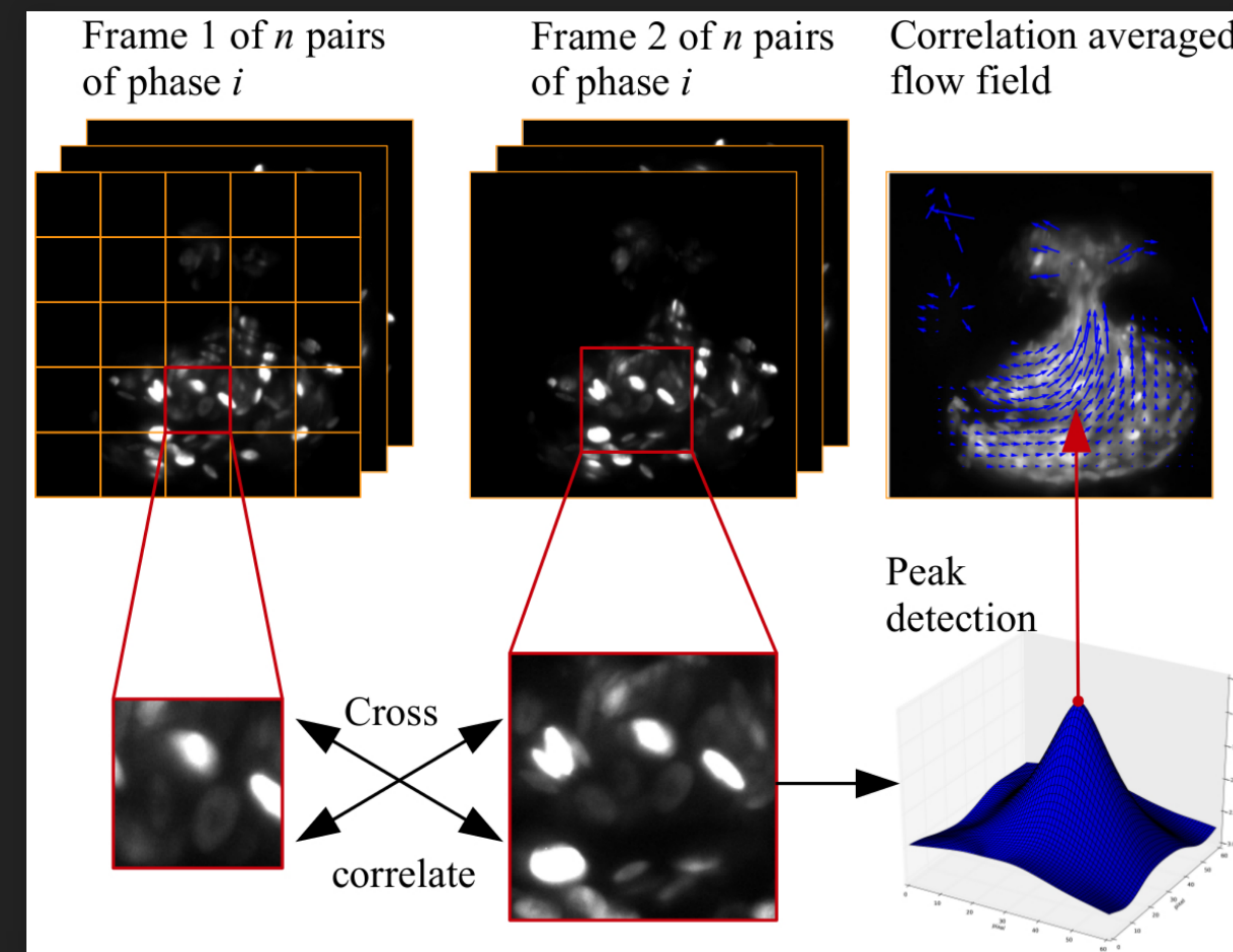
QUANTIFYING BLOOD FLOW

QUANTIFYING BLOOD FLOW

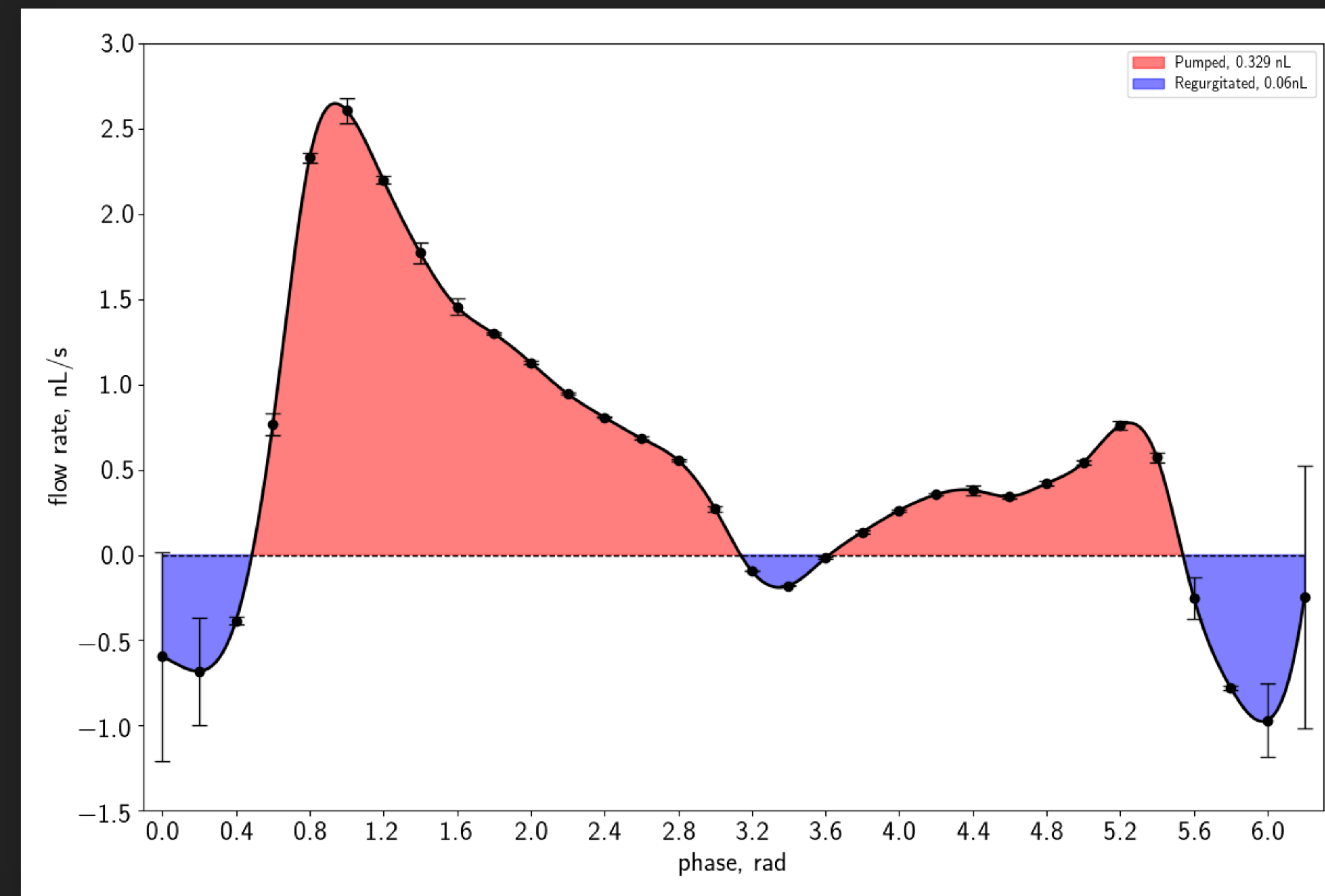


Zickus & Taylor Submitted (2017)

PARTICLE IMAGE VELOCIMETRY



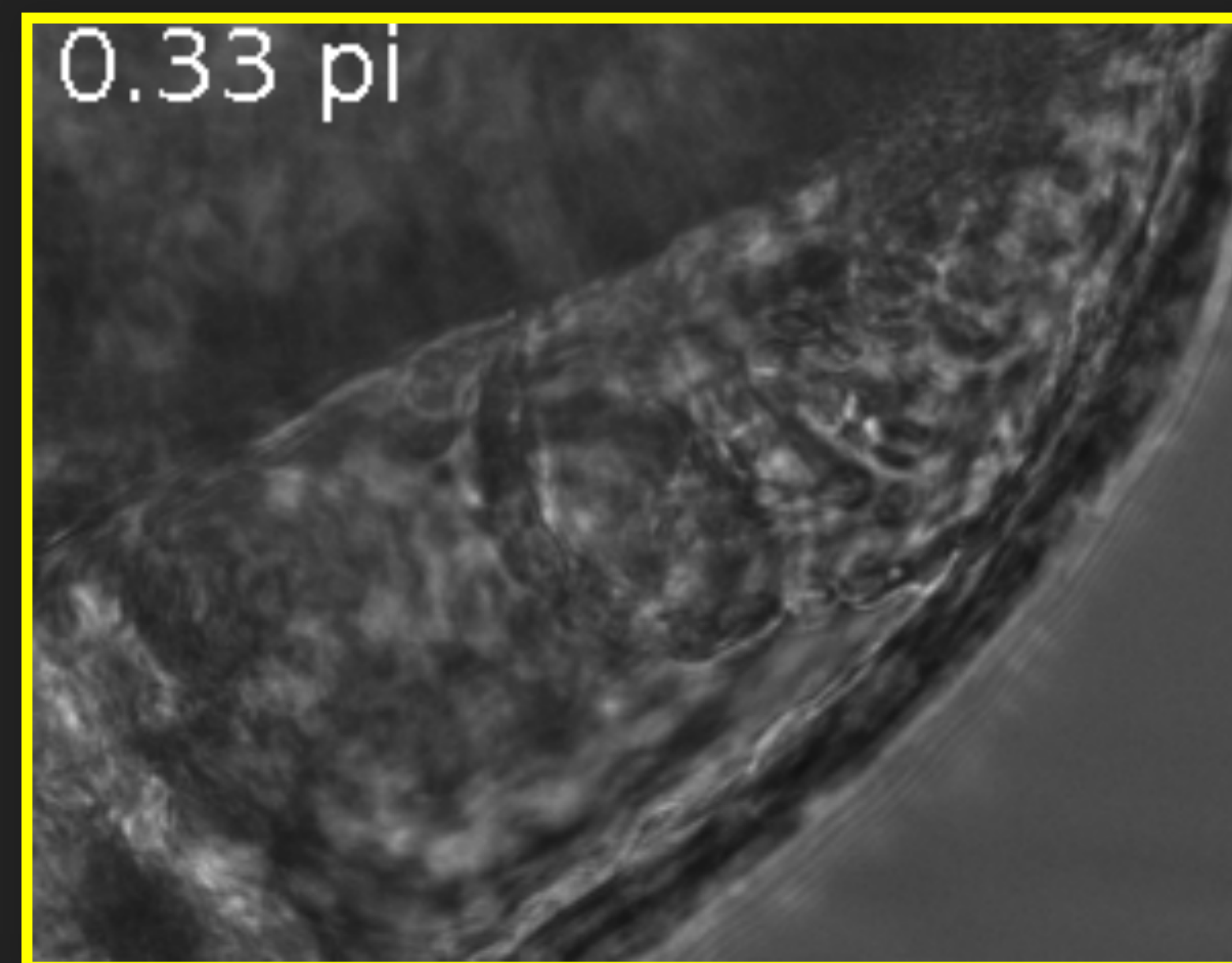
FLOW RATE



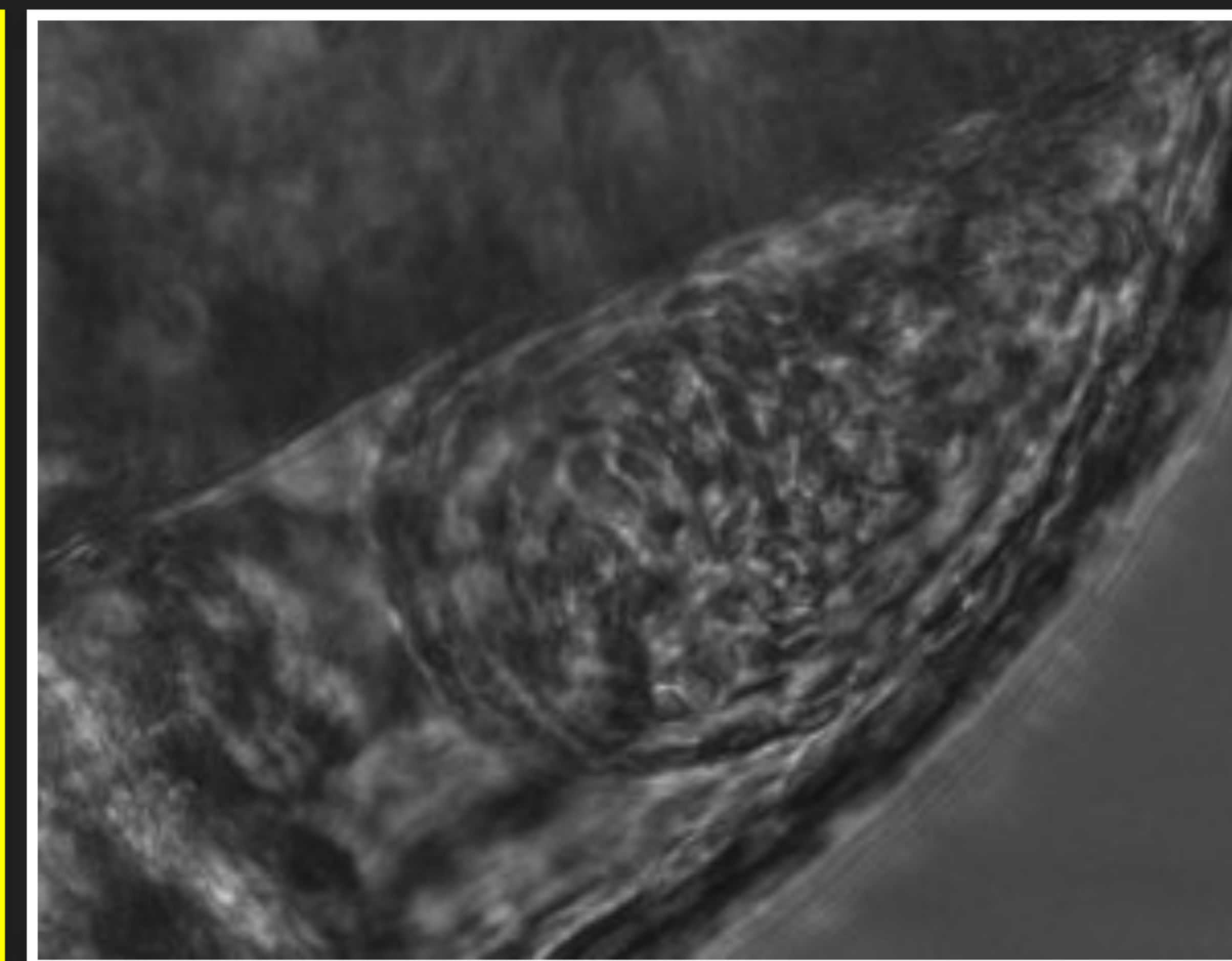
Zickus & Taylor Submitted (2017)

IMAGING OVER HOURS AND DAYS

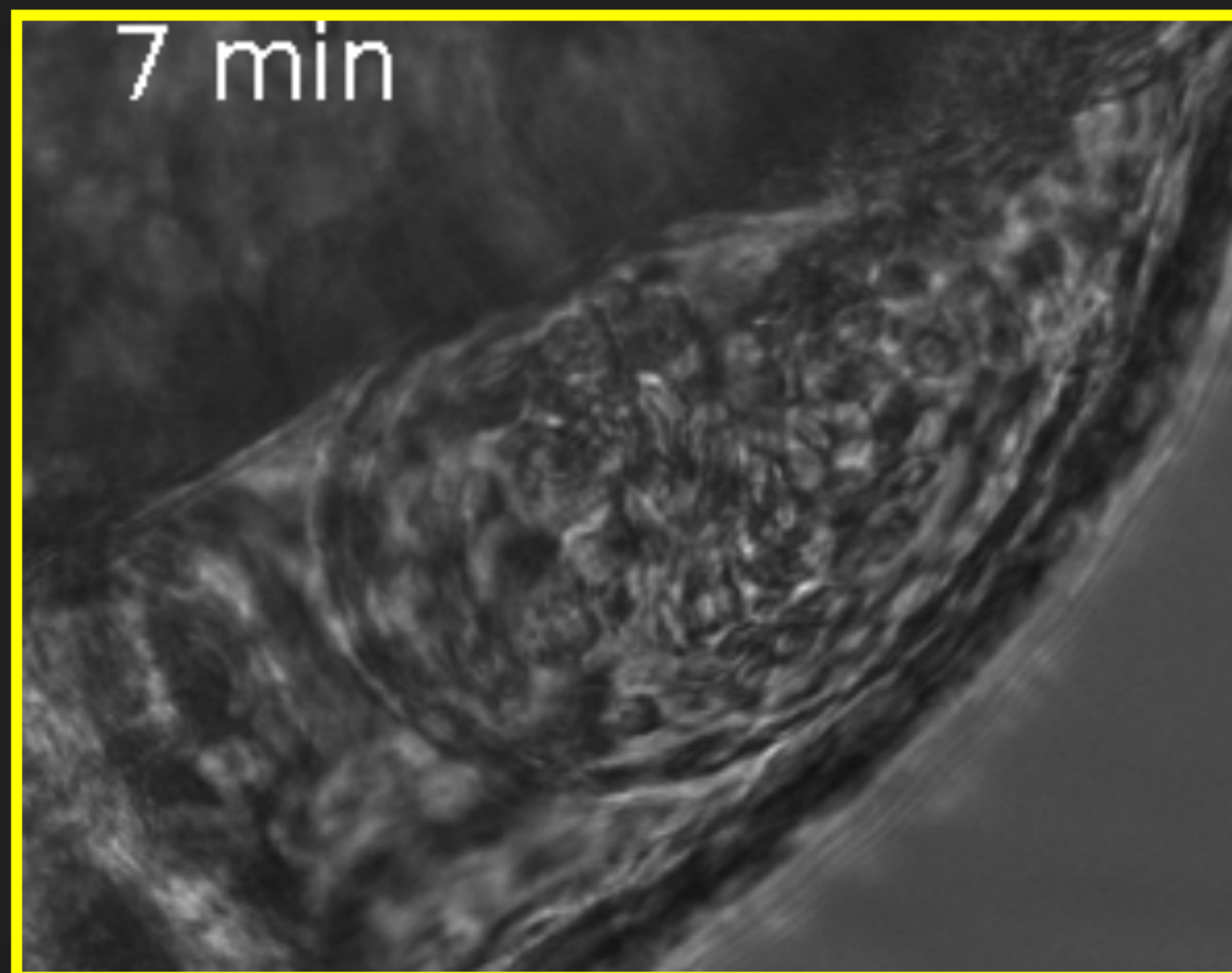
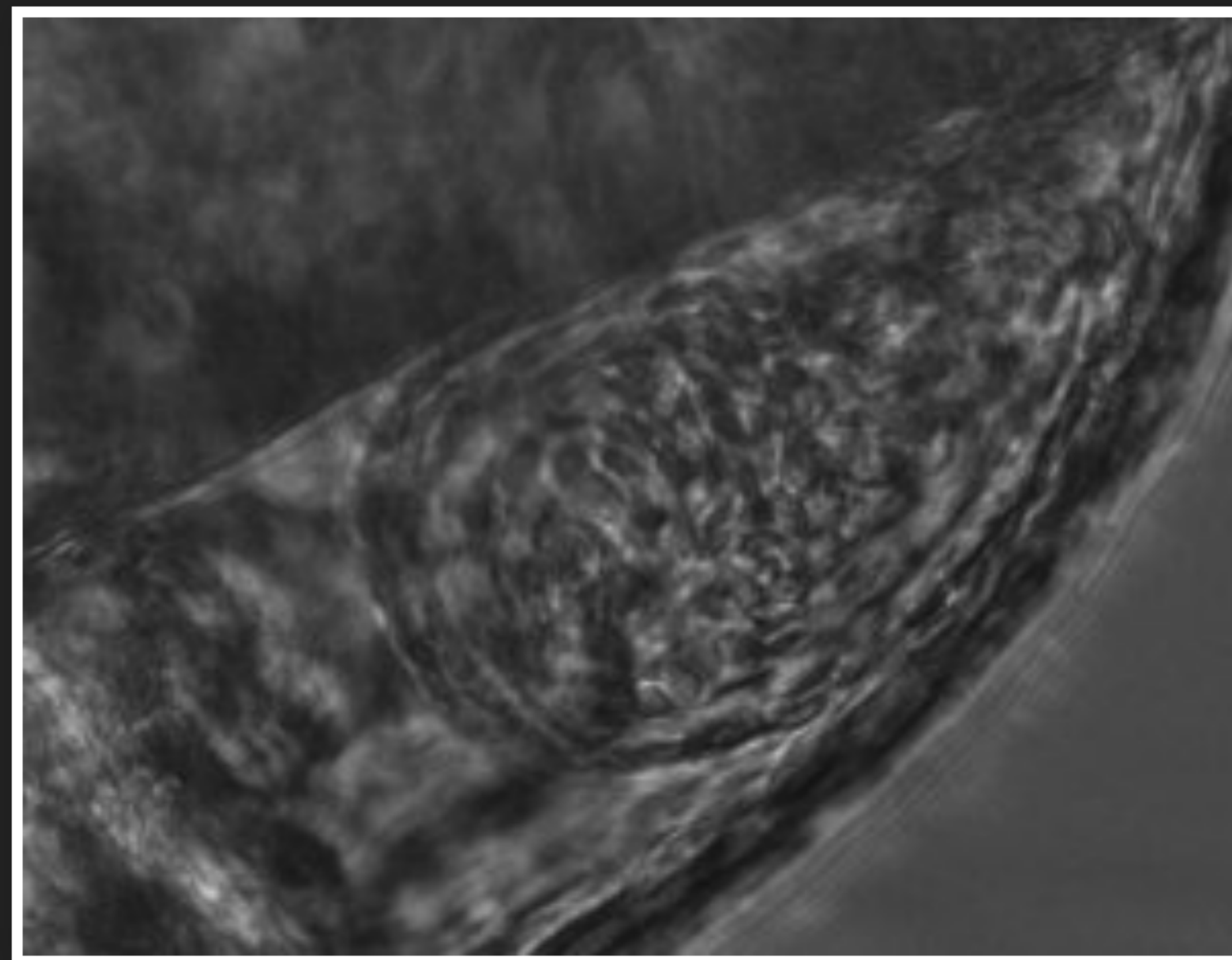
Reference Heartbeat



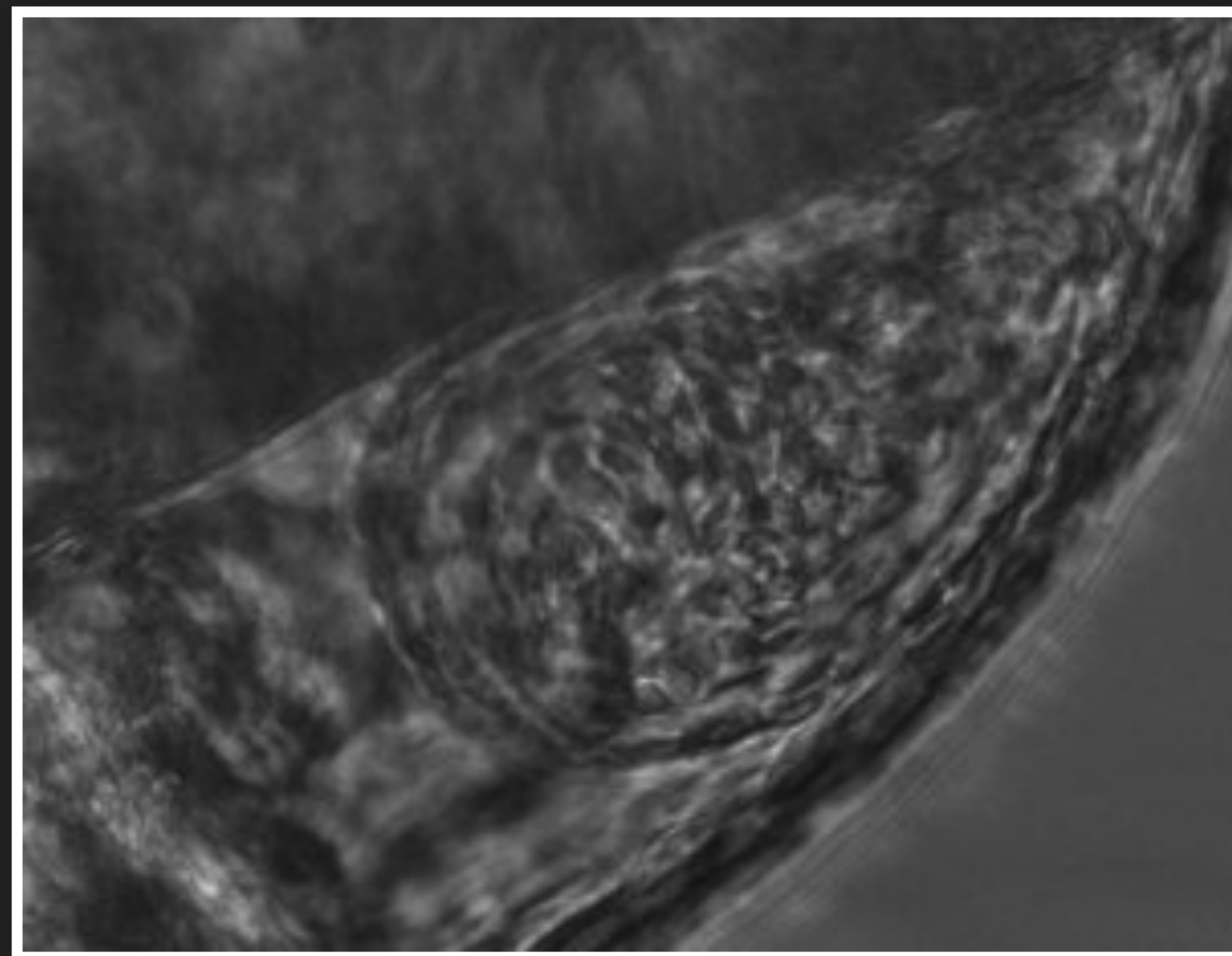
Initial Target Frame



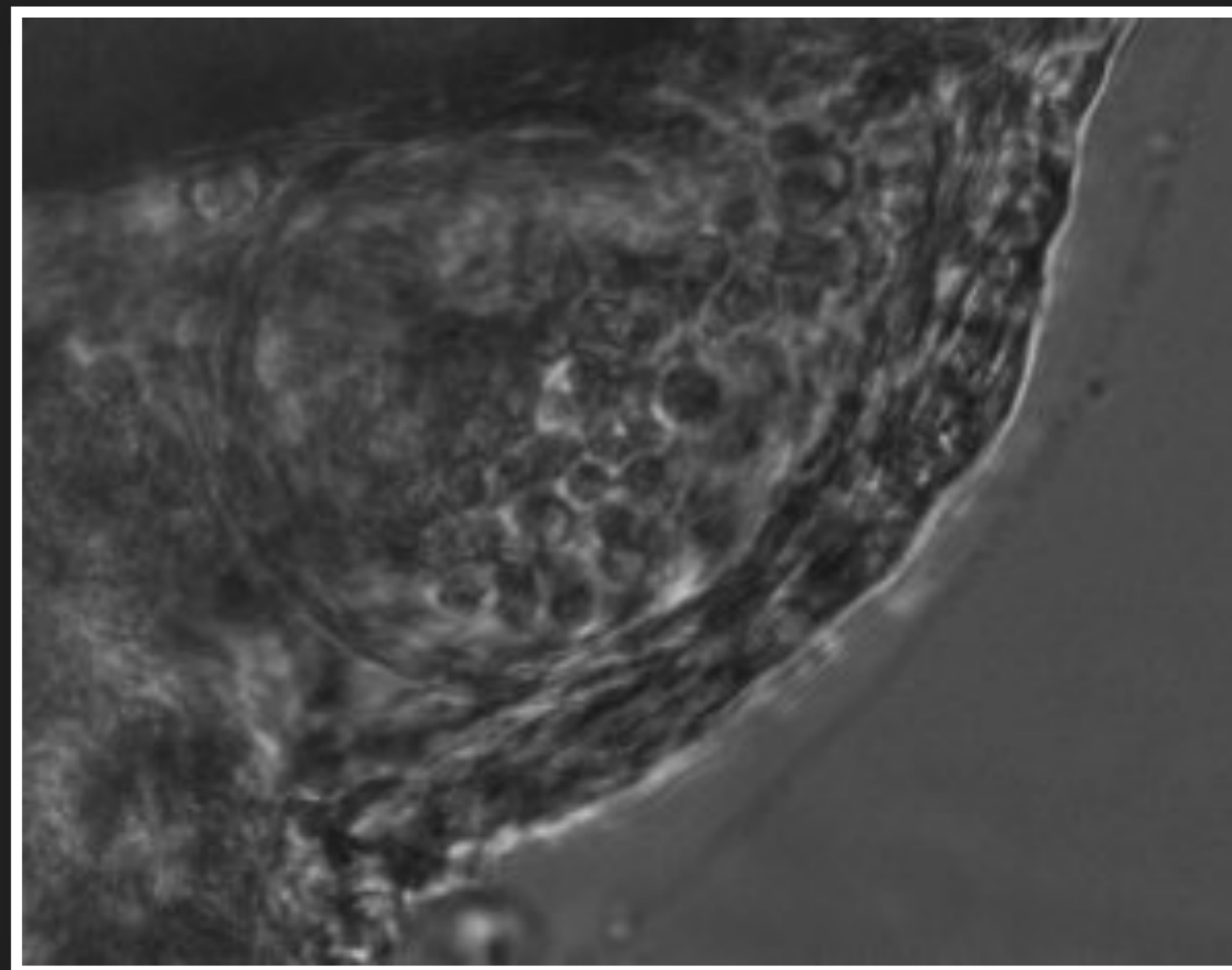
Initial Target Frame



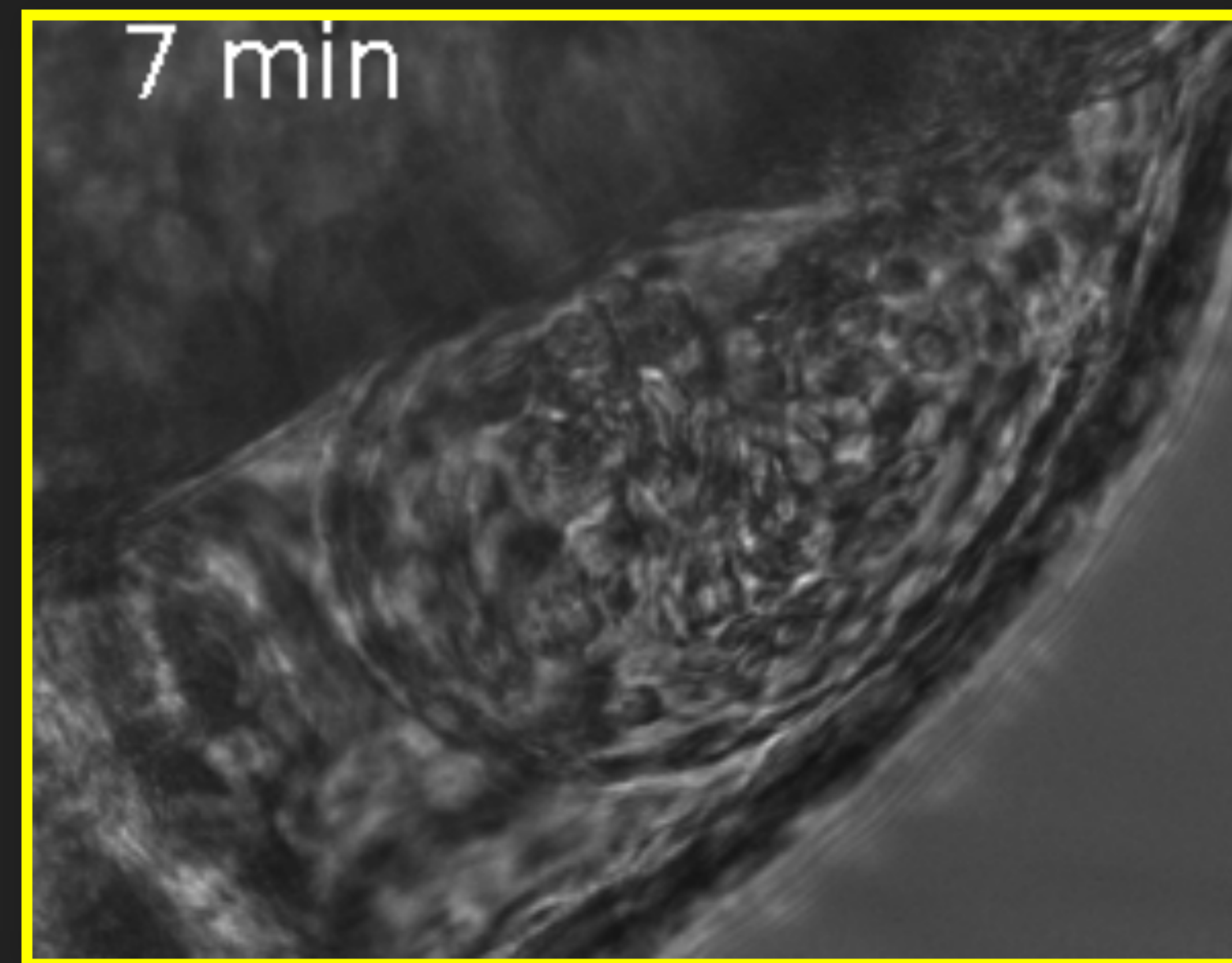
Initial Target Frame



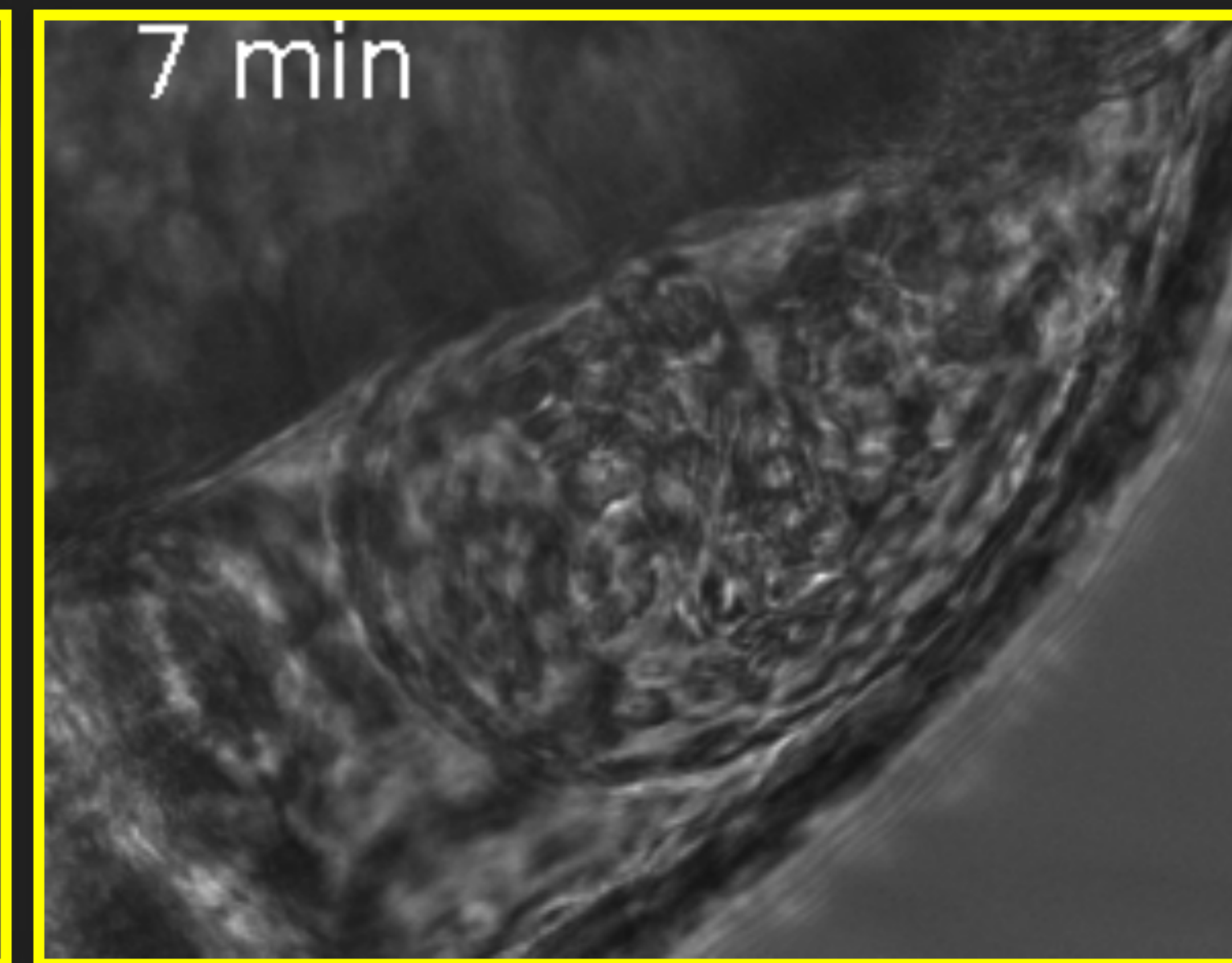
Final Target Frame



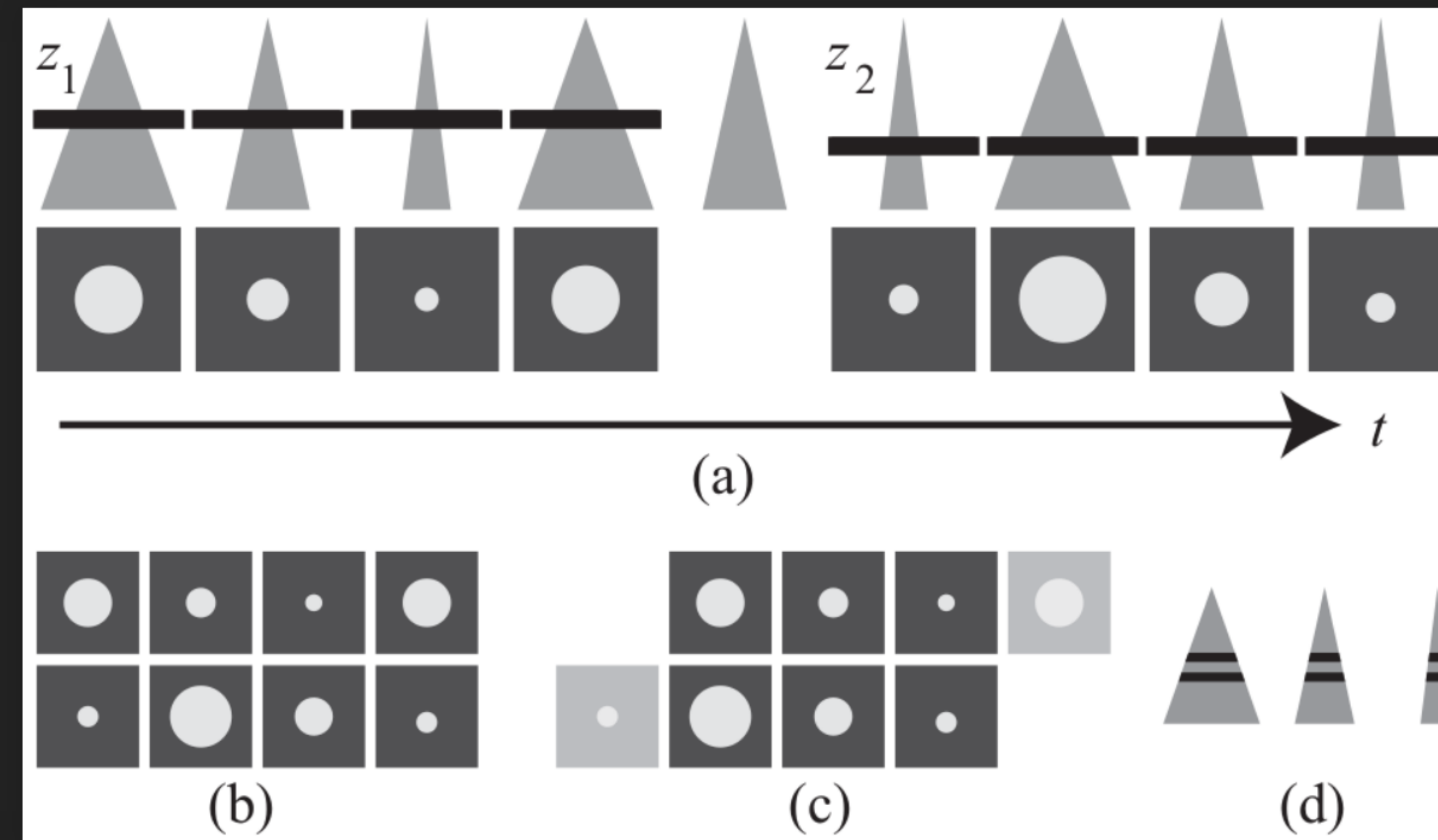
Manual



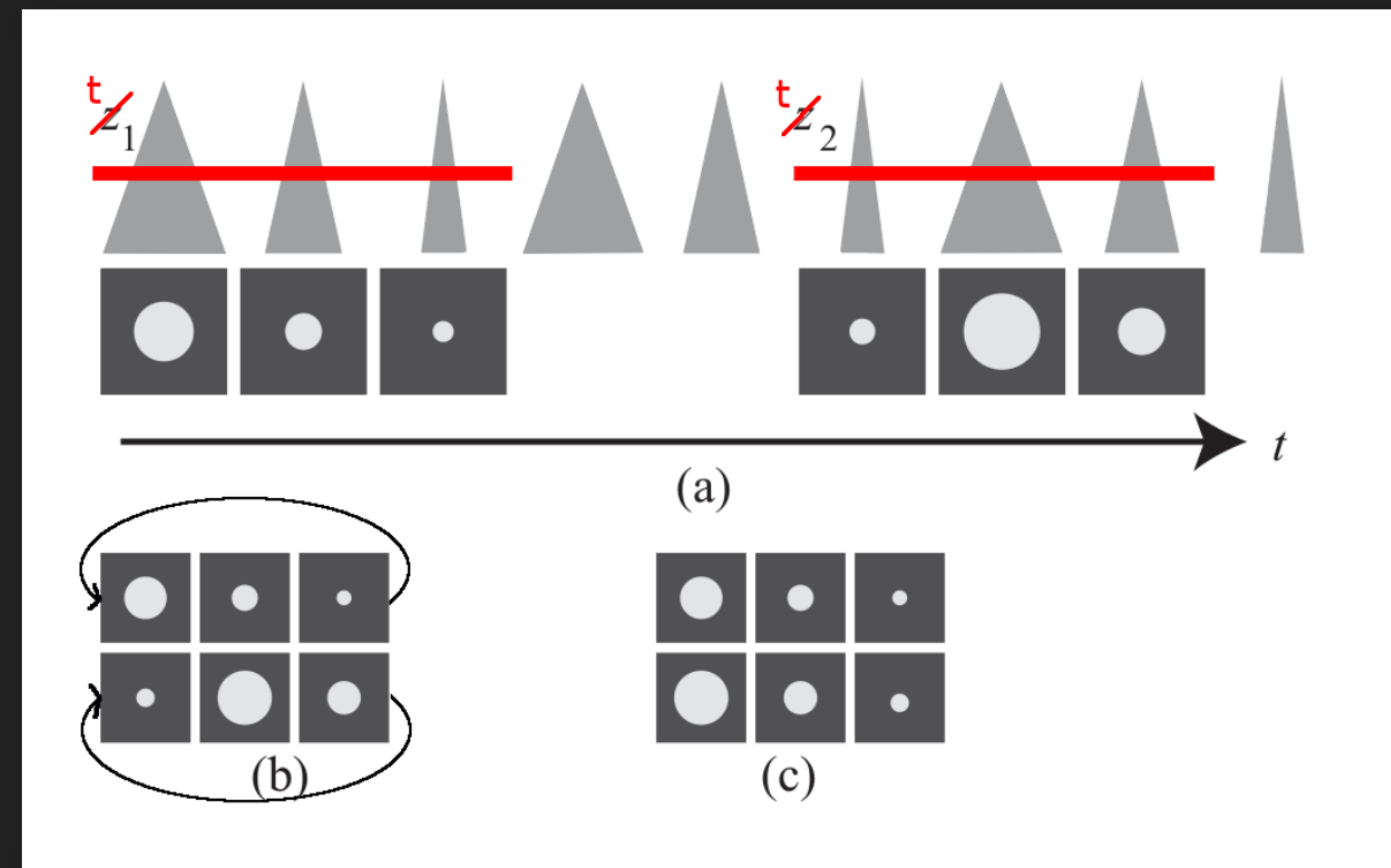
Prospective Only



HYBRID PROSPECTIVE- RETROSPECTIVE OPTICAL GATING

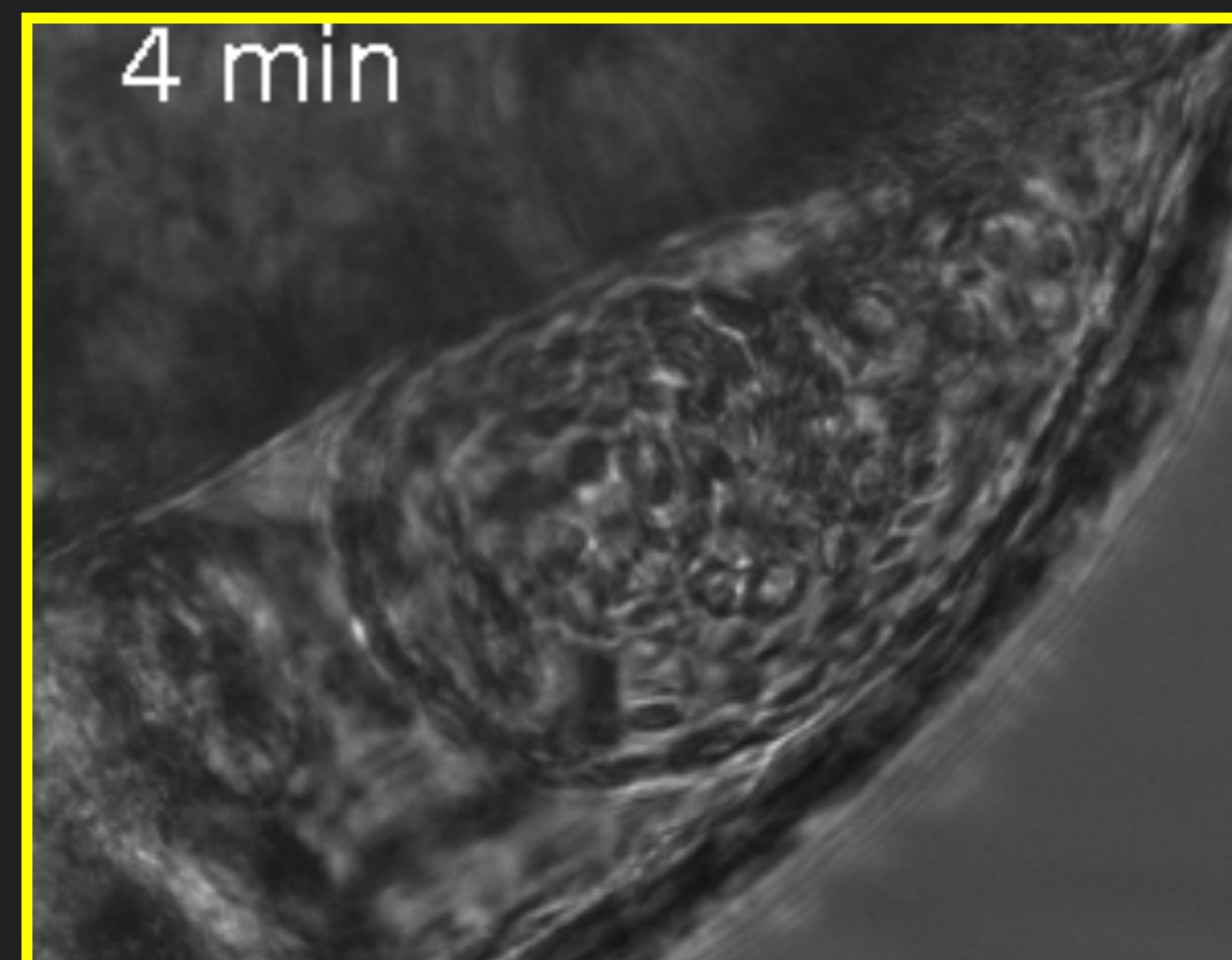


Liebling et al. IEEE ISBI (2006)

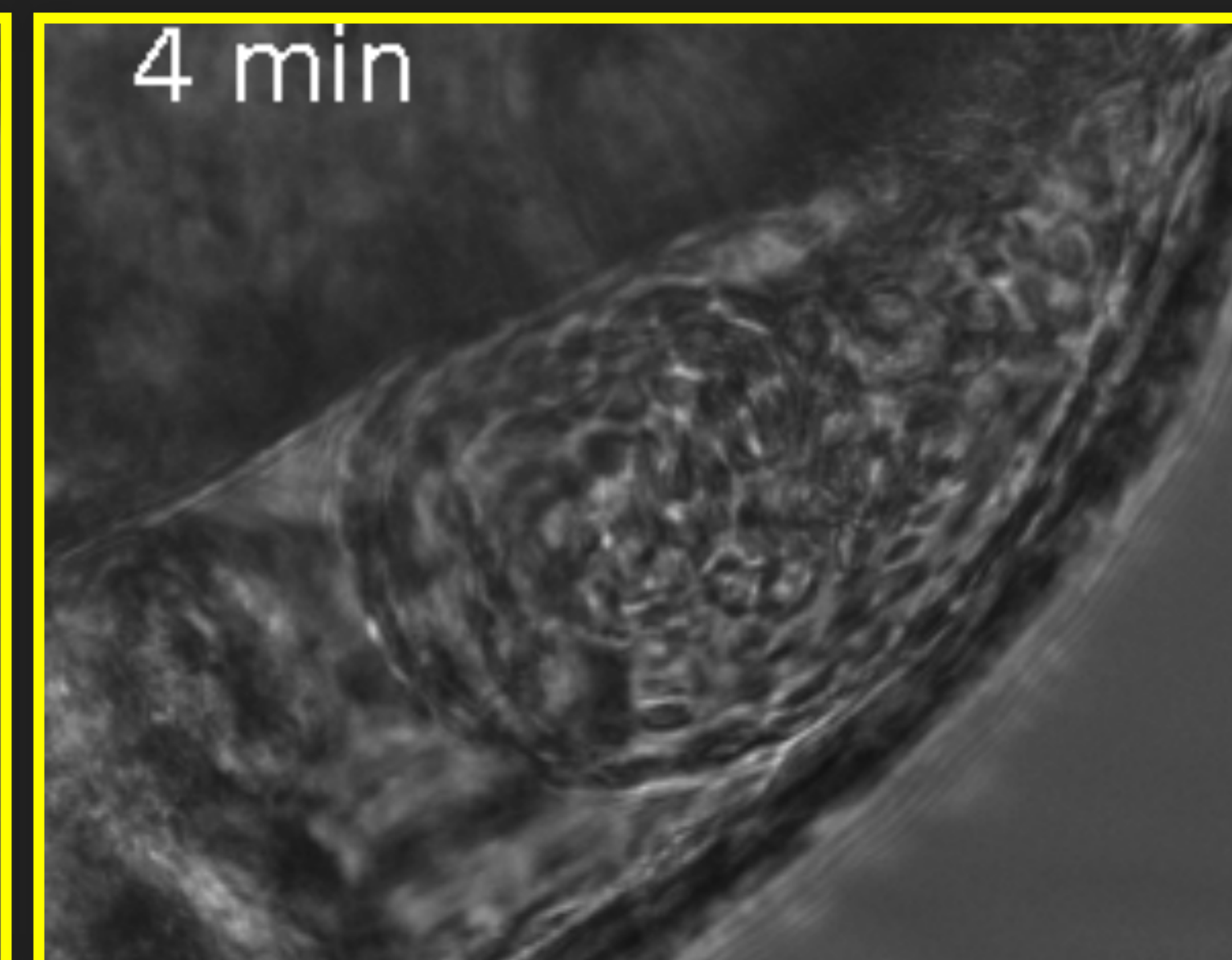


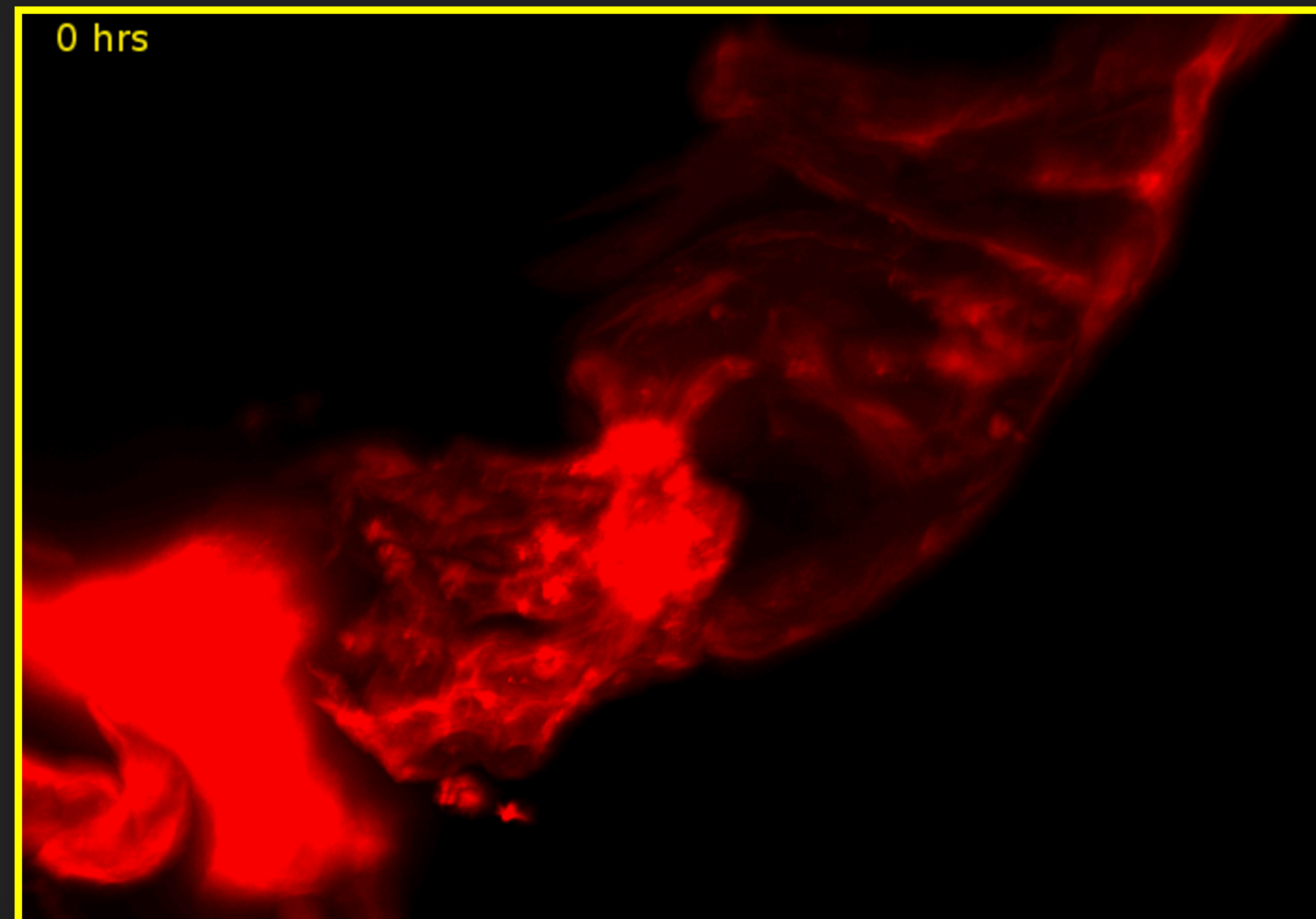
Modified from Liebling et al. IEEE ISBI (2006)

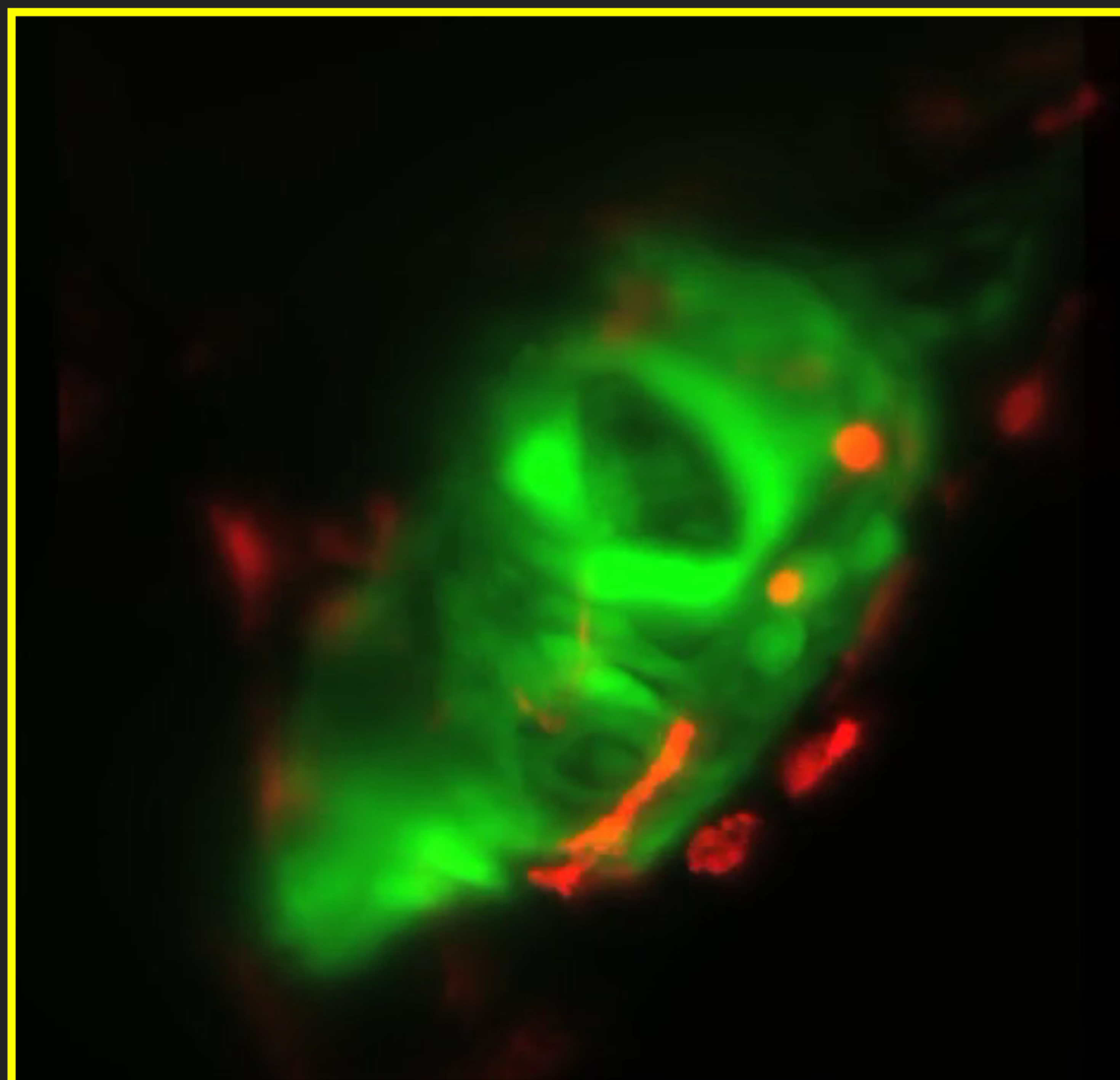
Manual



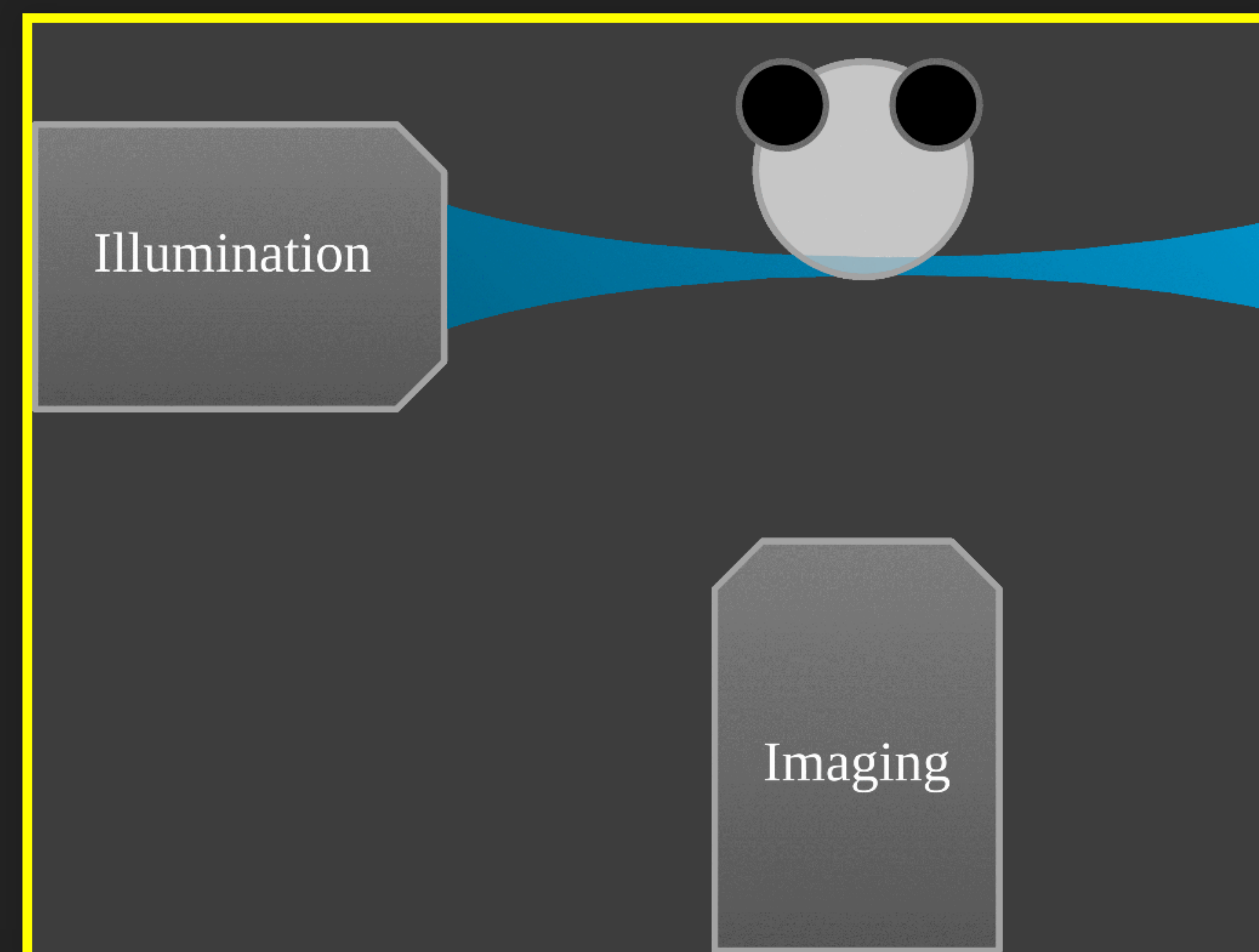
Automated

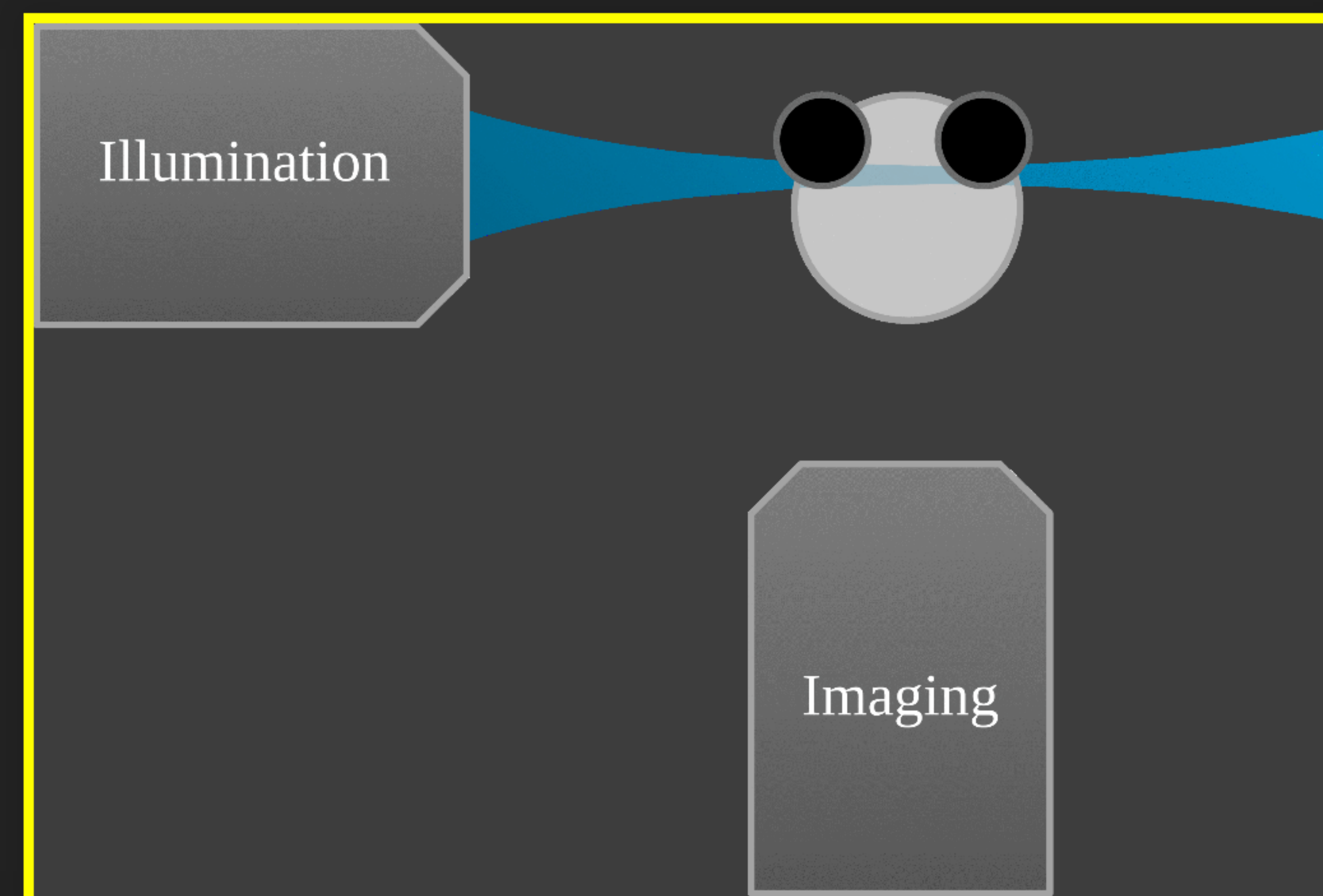


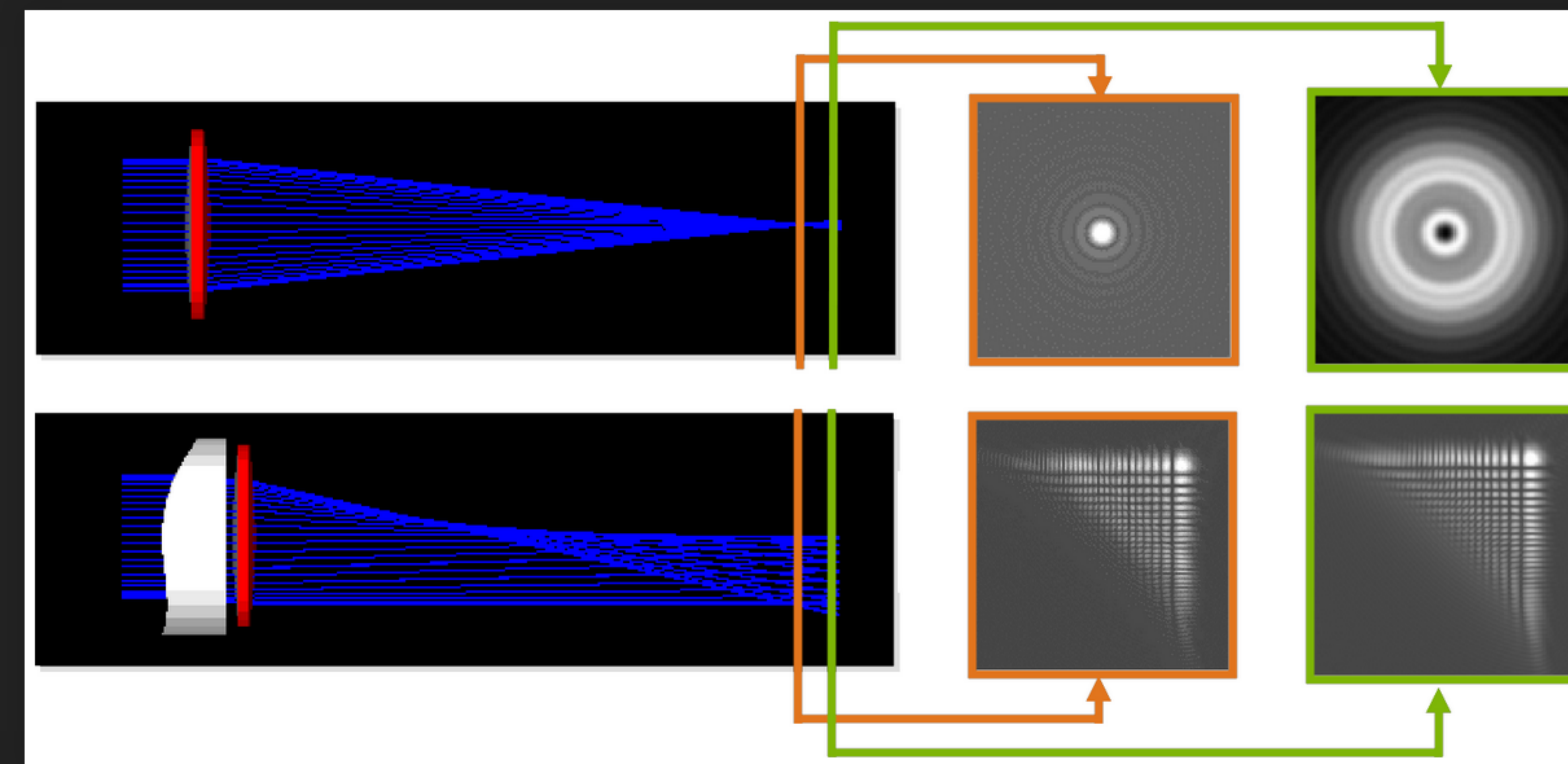




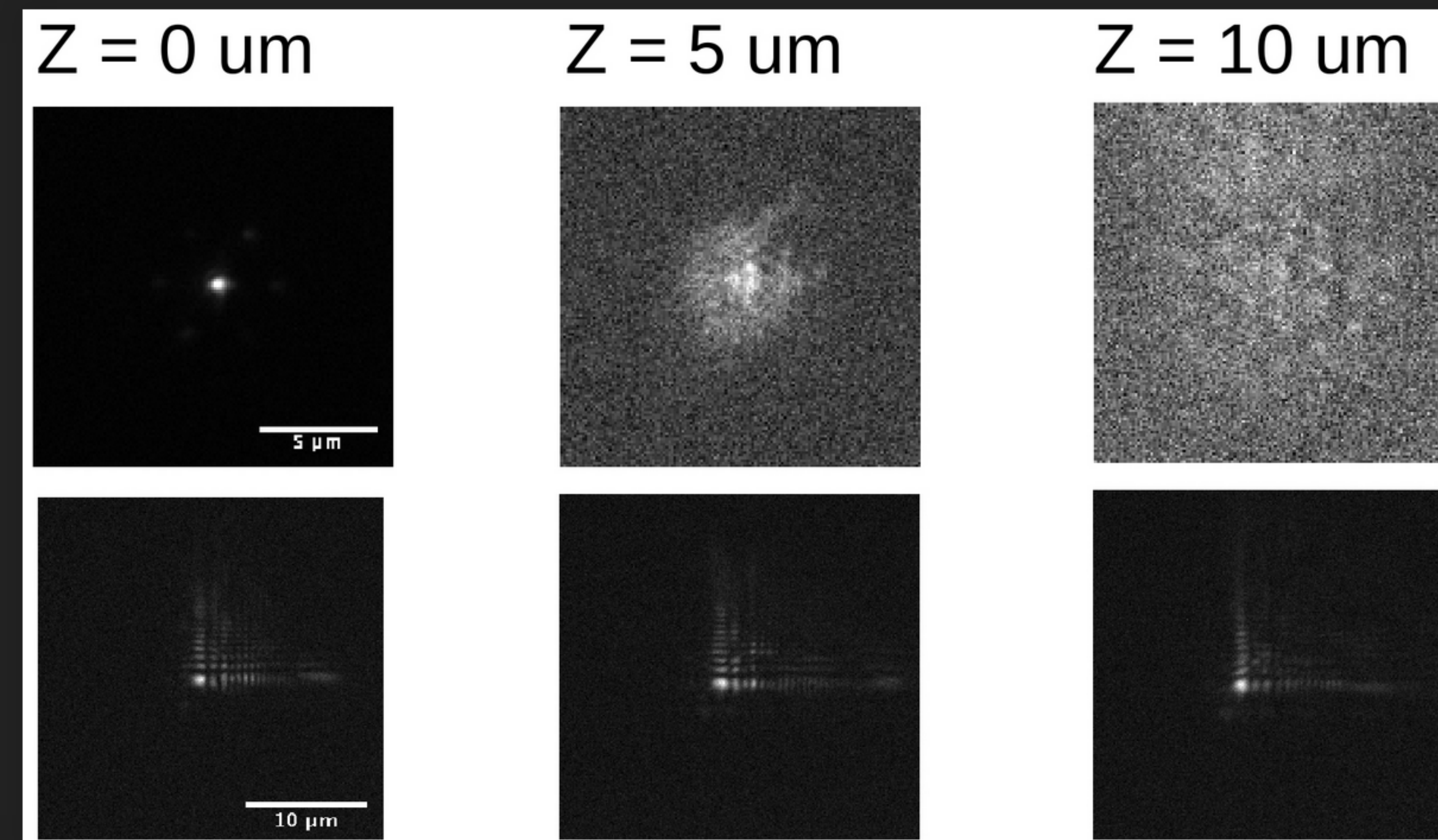
THE FUTURE



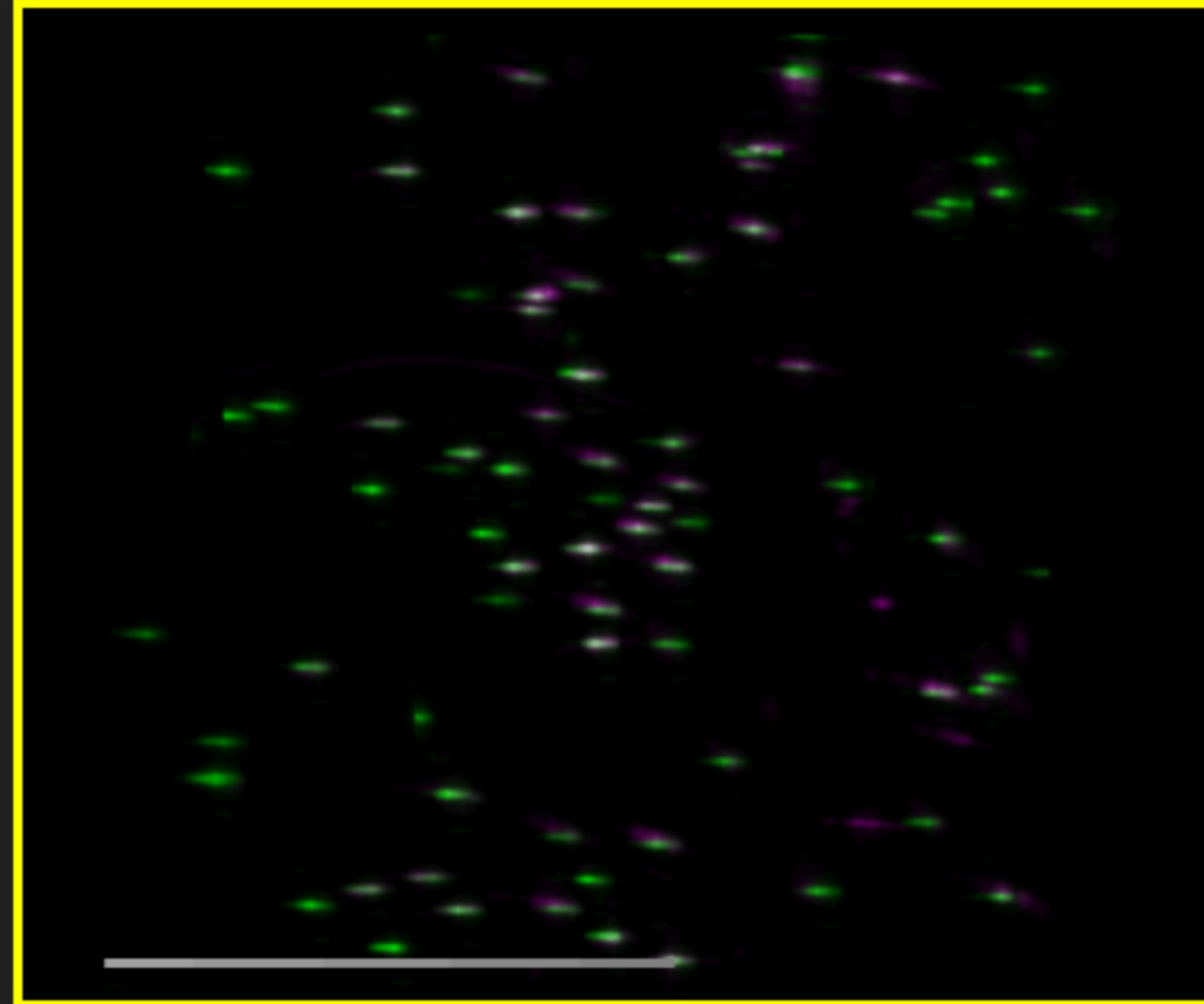


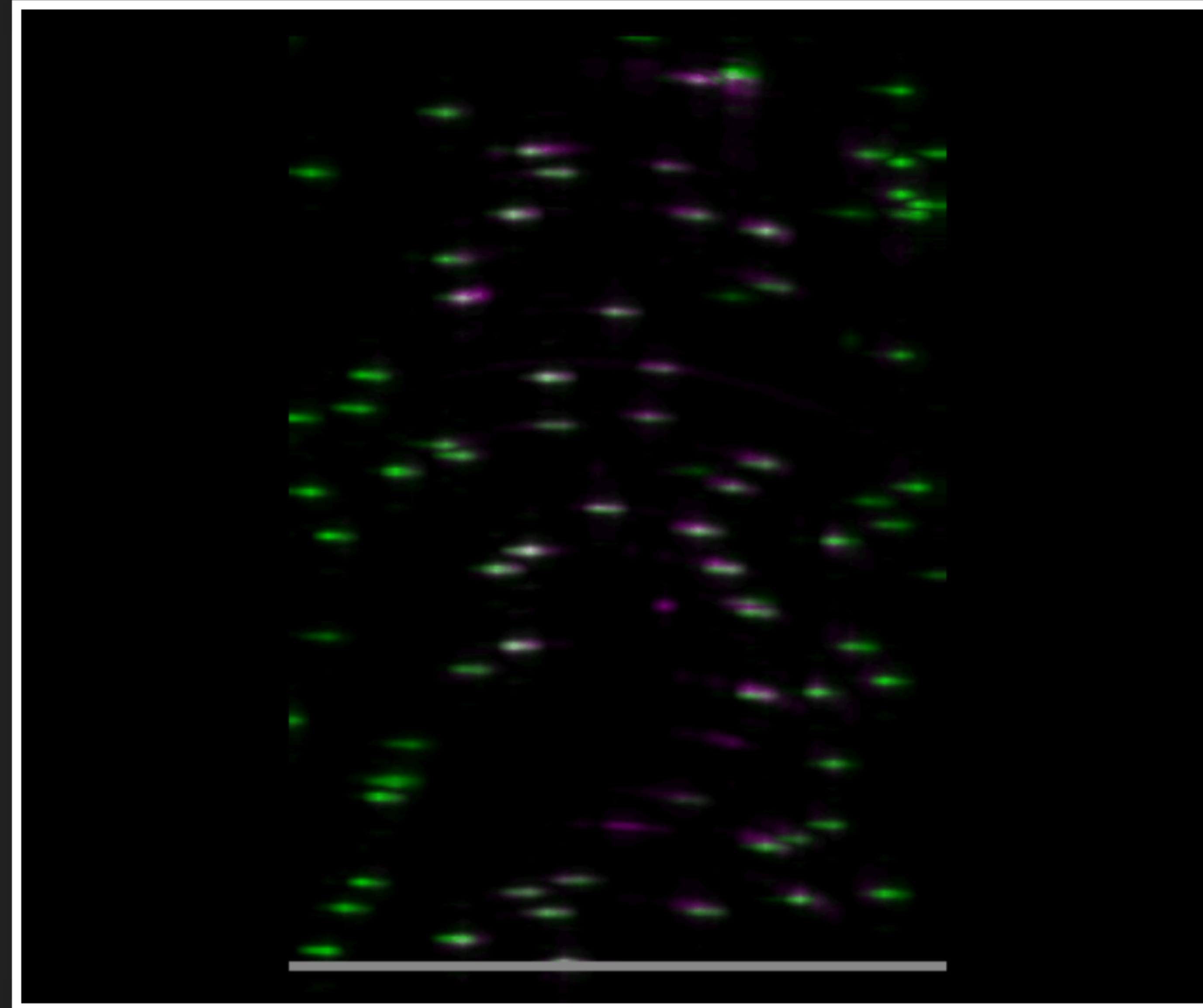


Zammit & Harvey



Mitchell & Taylor





PhD Positions - findaphd.com

Search "Taylor and Glasgow"

Or come and have a chat!

chas.nelson@glasgow.ac.uk

