

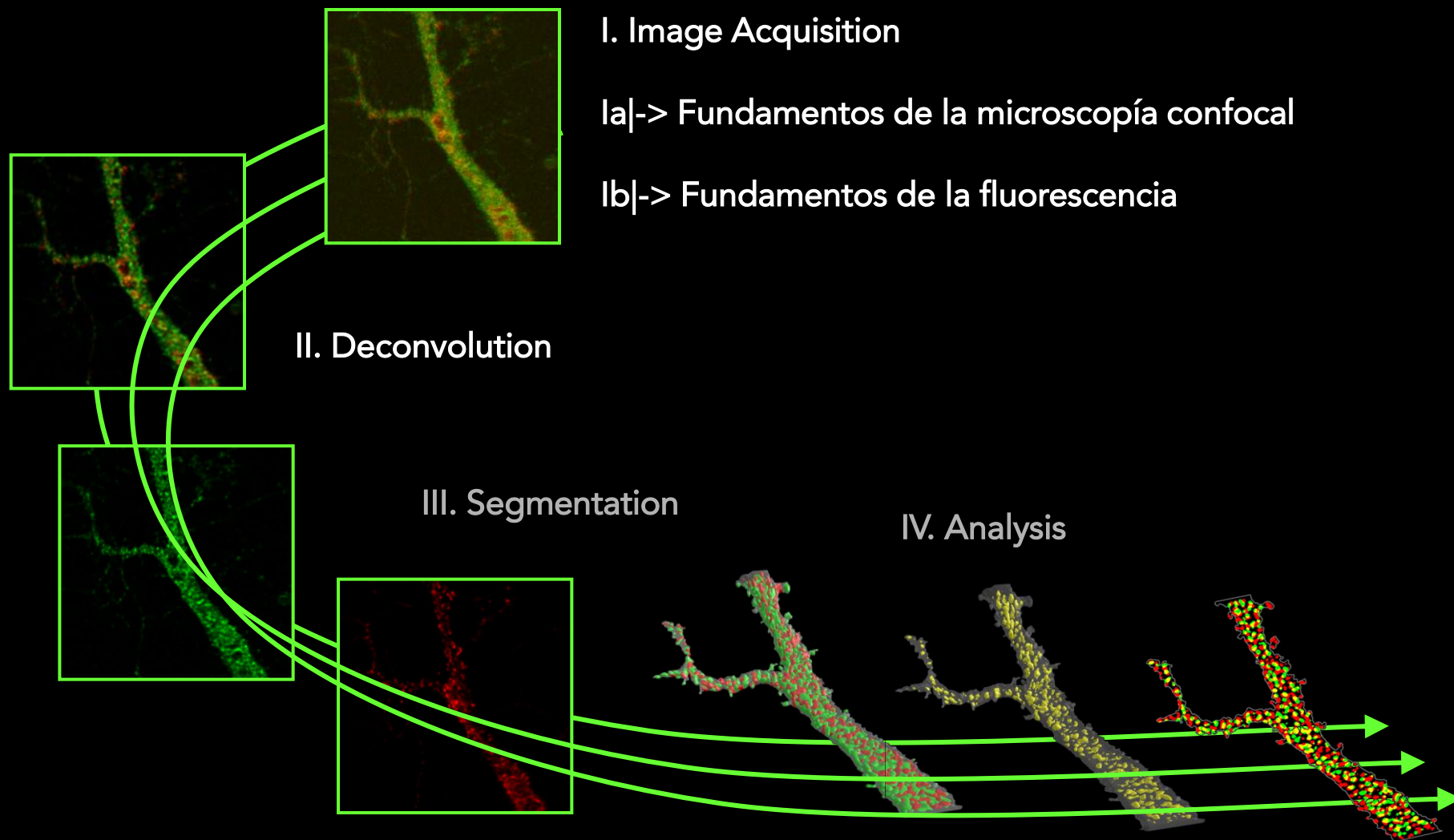


Prof. Dr. Steffen Härtel

www.scian.cl / www.cimt.cl / www.cens.cl / www.bni.cl / www.rsdue.cl

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Centro de Informática Médica y Telemedicina (CIMT)
Centro Nacional en Sistemas de Información en Salud (CENS)
Biomedical Neuroscience Institute (BNI)
Red de Salud Digital de Universidades del Estado (RSDUE)
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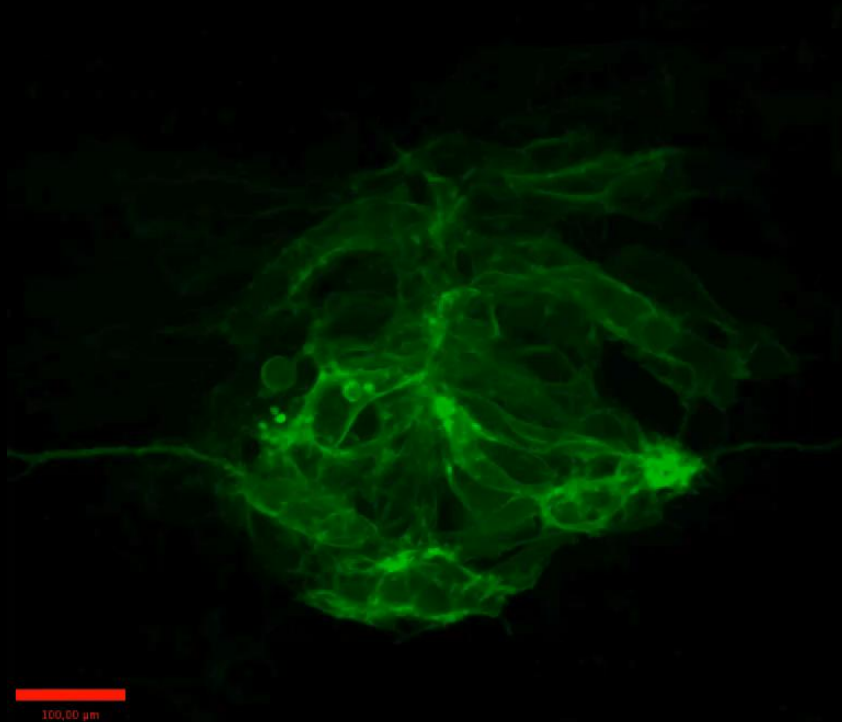
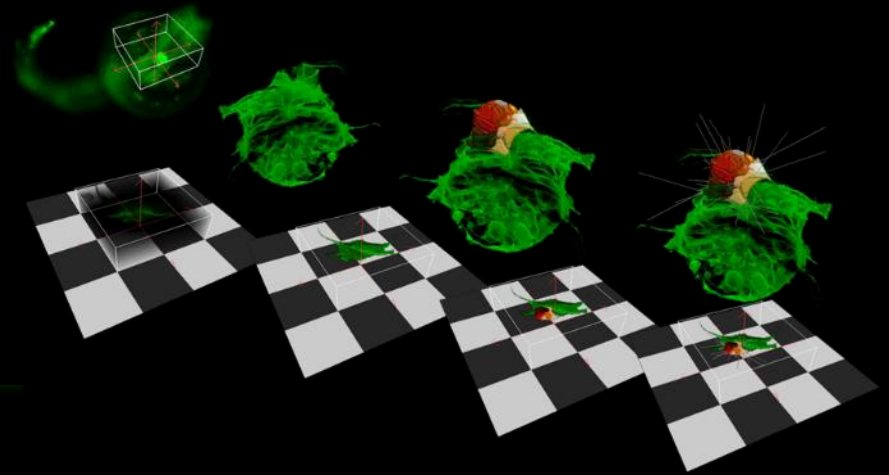
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Welcome to REDECA

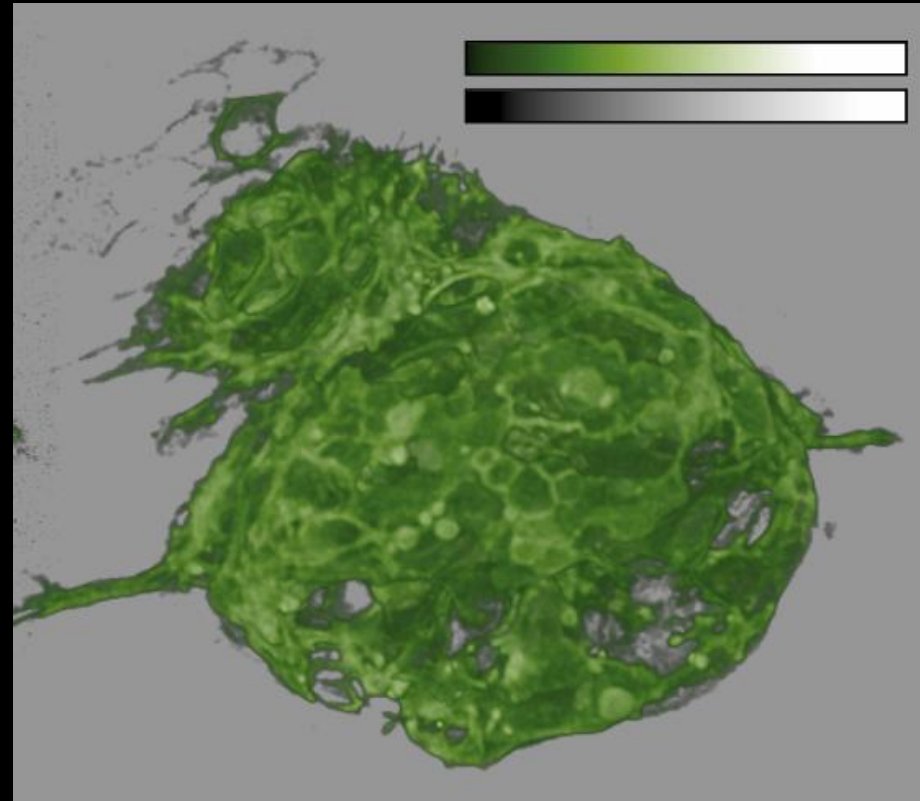
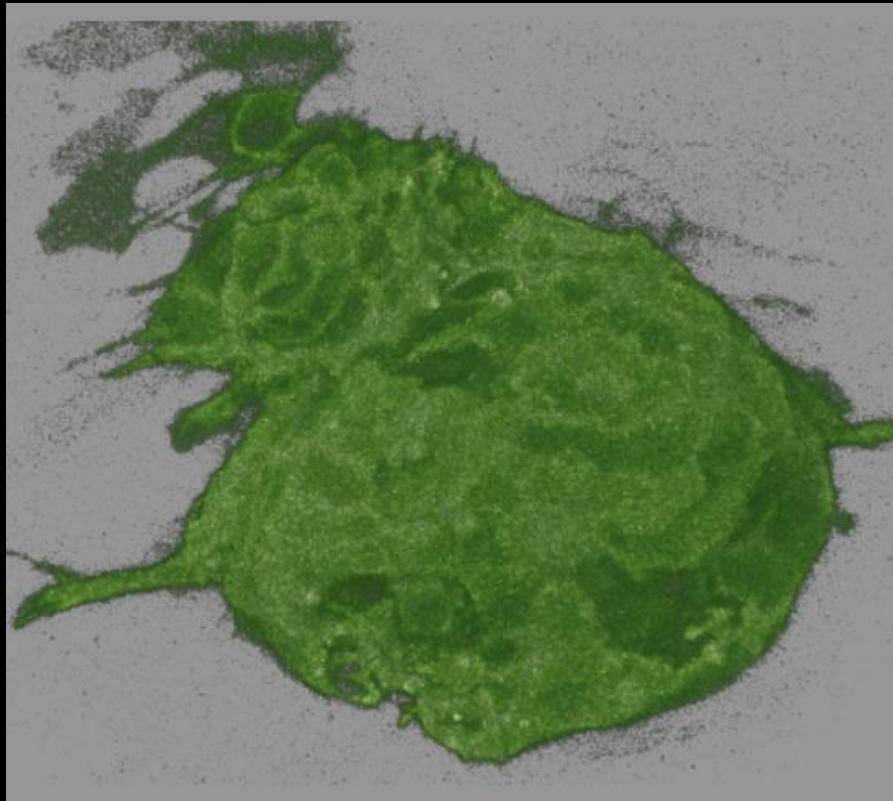
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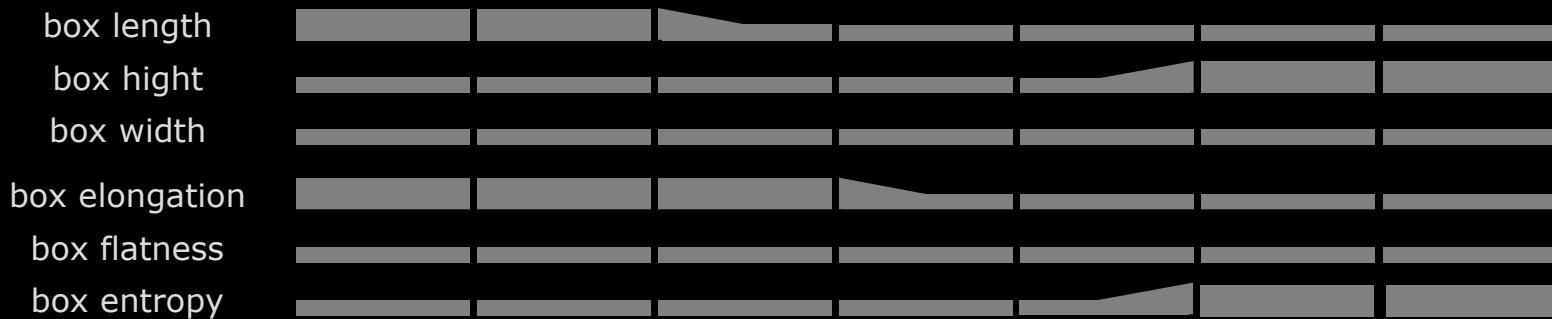
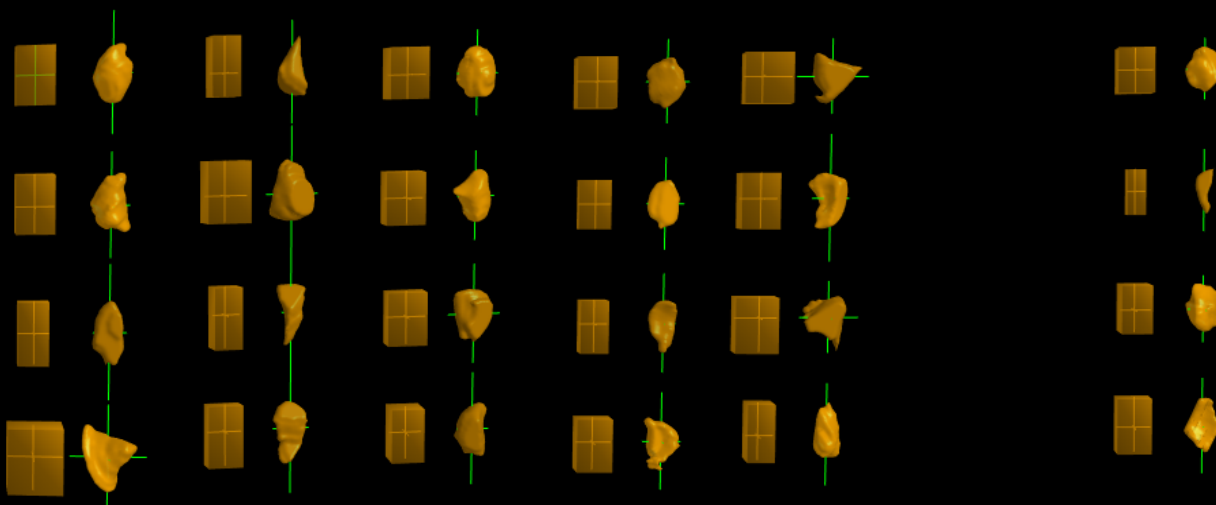
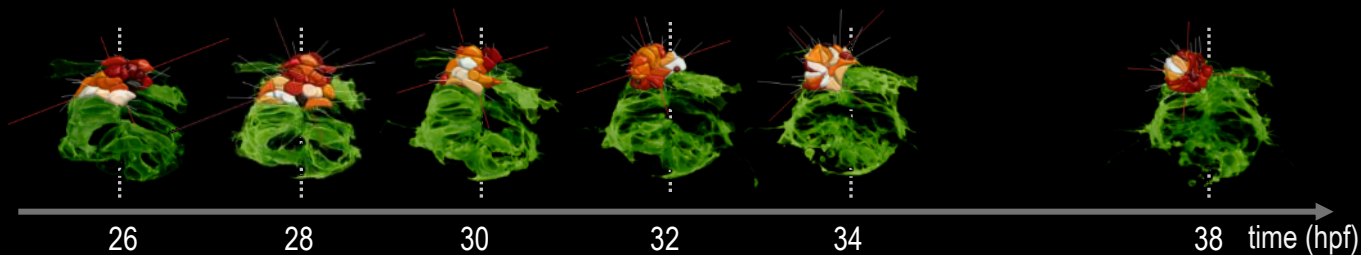
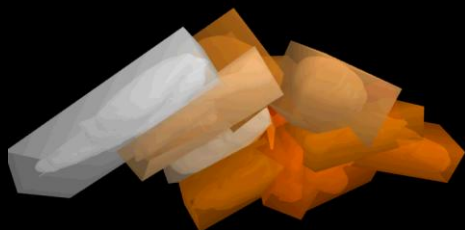
|> Perkin Elmer Spinning Disk with laser ablation



| -> Deconvolution

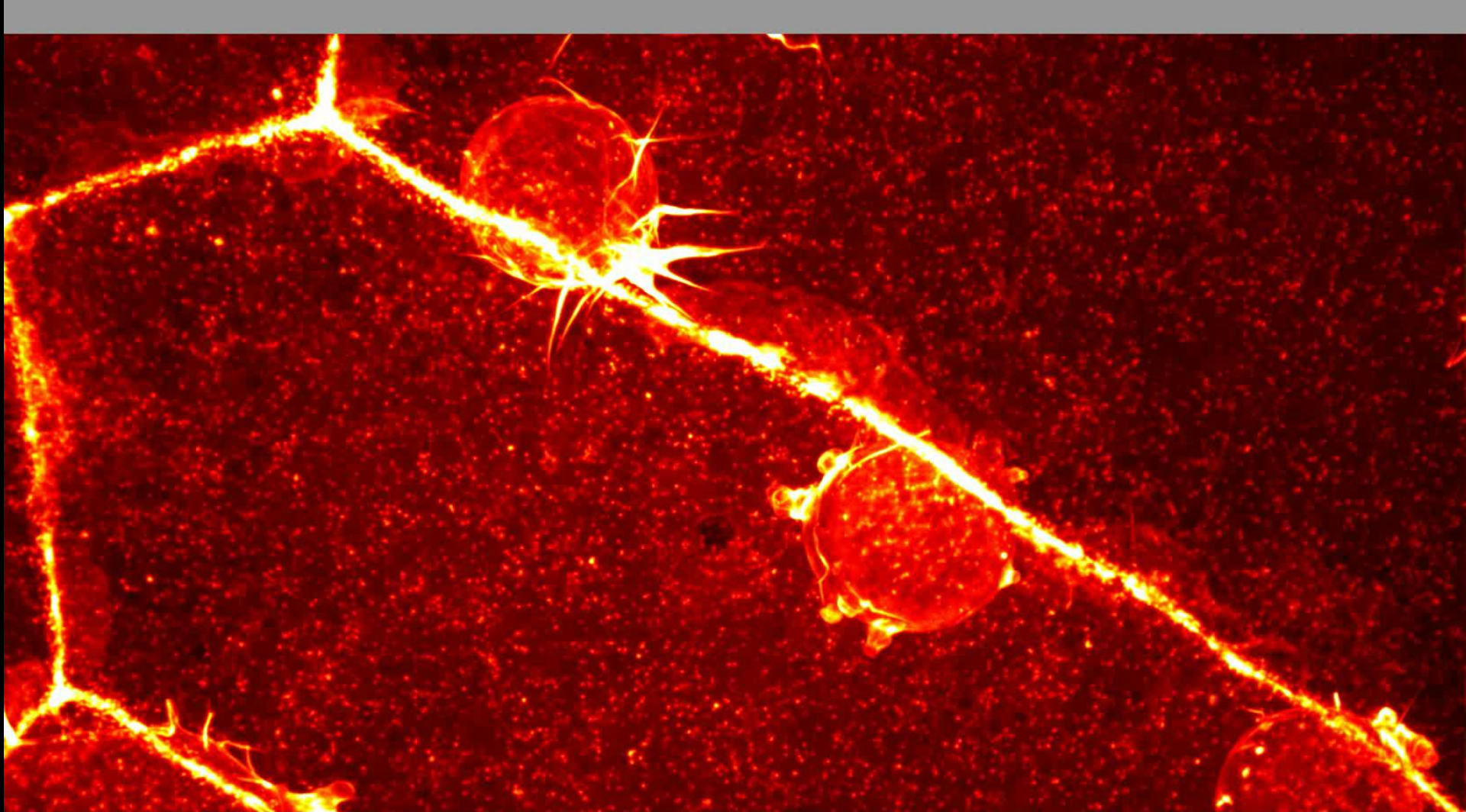


box model



|-> Perkin Elmer Spinning Disk

Austrolebias Nigripinnis, Microinyección mRNA para la expresión de LifeAct-GFP (actina). migración de Deep Cells (DC) a través del Enveolpping Layer (EVL). (G.Reig)

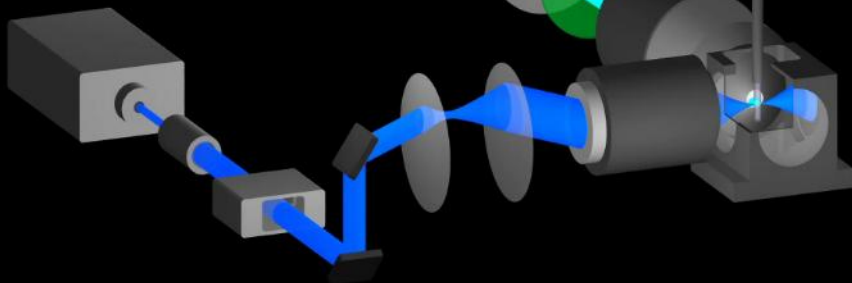
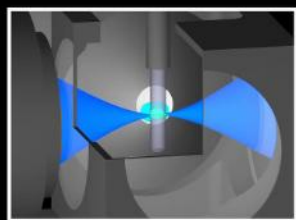
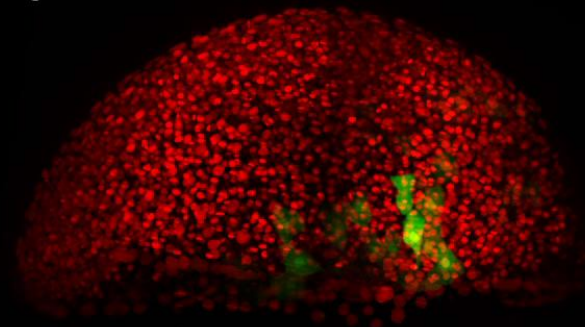
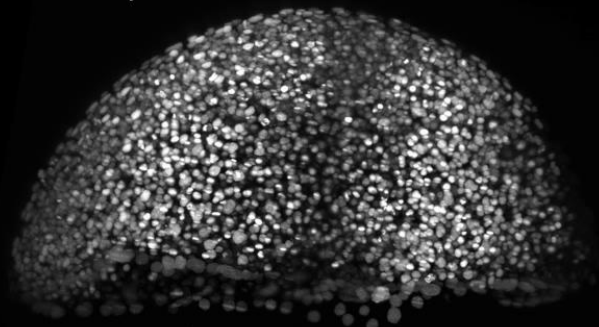


H2B-mCherry

crestin::GFP

merge

00:00:00



Ulrich Kubitscheck
Bonn

Pulgar, Keller, Concha, unpublished

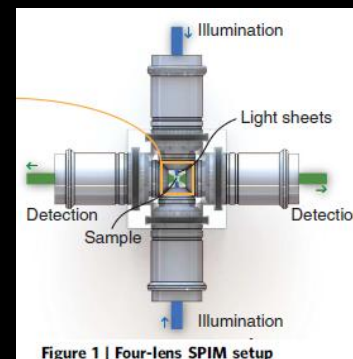


Figure 1 | Four-lens SPIM setup

Jan Huiskens
Dresden

H2B-mCherry

crestin::GFP

merge

00:00:00



Pulgar, Keller, Concha, unpublished



BIOMEDICAL NEUROSCIENCE INSTITUTE



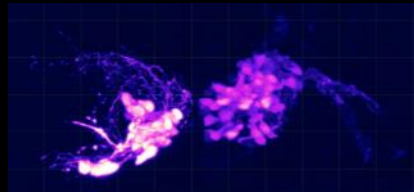
**BNI en la vanguardia
de la microscopia**

Armar microscopios de
alta resolución temporal
permitirá la creación de
nuevas capacidades
profesionales y
tecnologías en nuestro
país

What about large-scale connectivity in high resolution?

If you cannot improve your optics, enlarge the sample.

Expansion Microscopy can magnify the zebrafish brain by factor 4.



Juan Eduardo Rodríguez
Kubitscheck-Lab
Bonn University

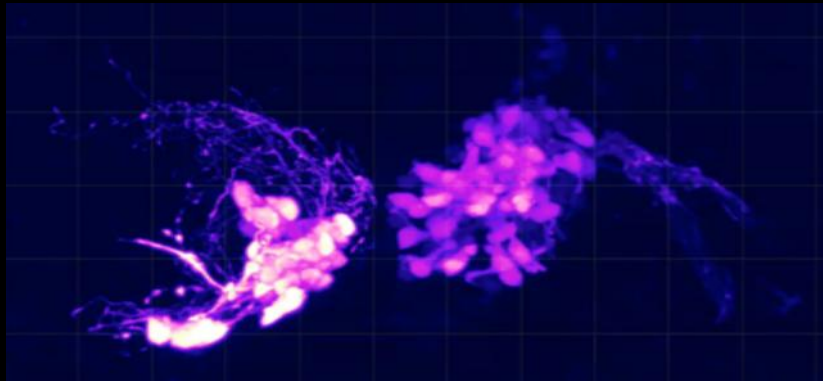


Karina Palma
Leo/SCIAN
U-Chile

What about large-scale connectivity in high resolution?

If you cannot improve your optics, enlarge the sample.

Expansion Factor 2 (1D) – 2×2 (2D) – $2 \times 2 \times 2$ (3D)



Juan Eduardo Rodríguez
Kubitscheck-Lab
Bonn University

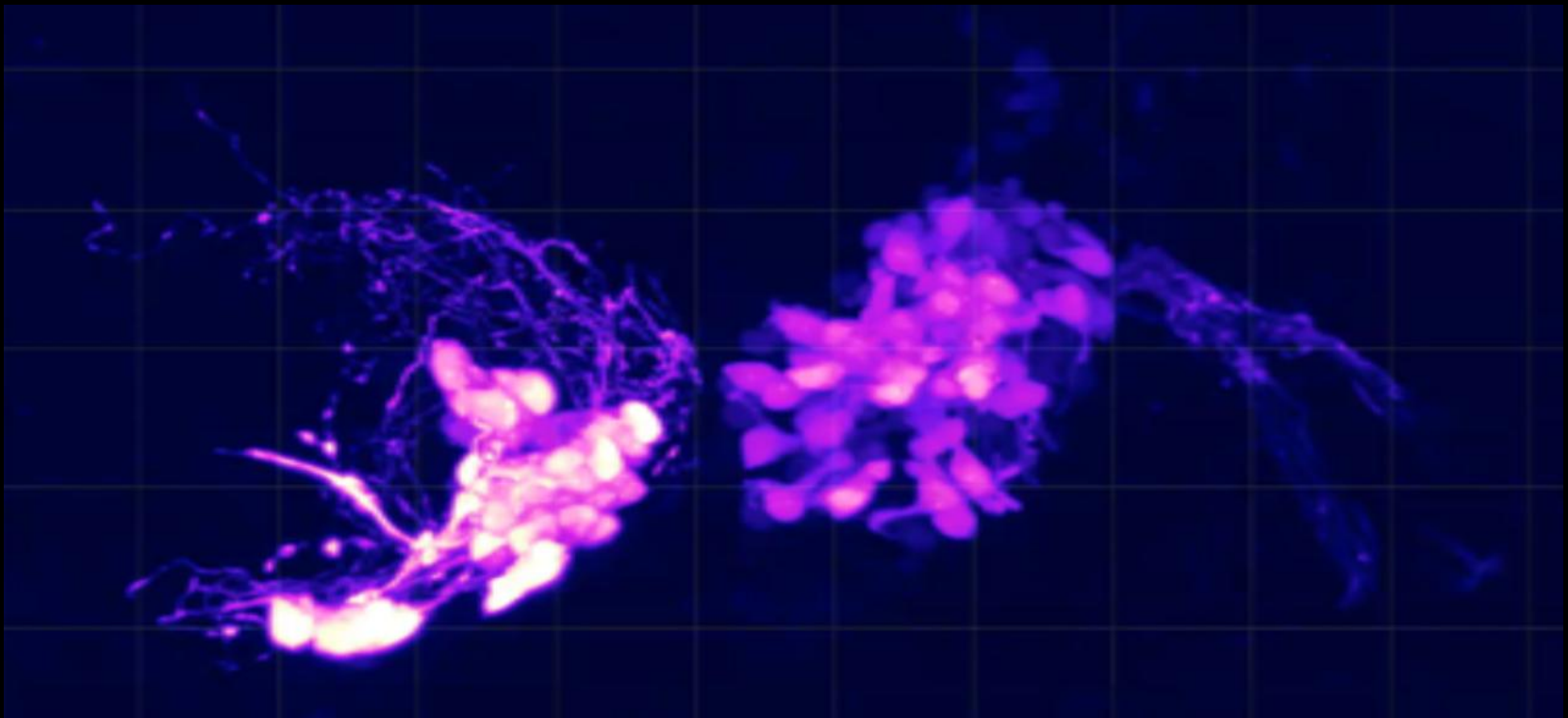


Karina Palma
Leo/SCIAN
U-Chile

What about large-scale connectivity in high resolution?

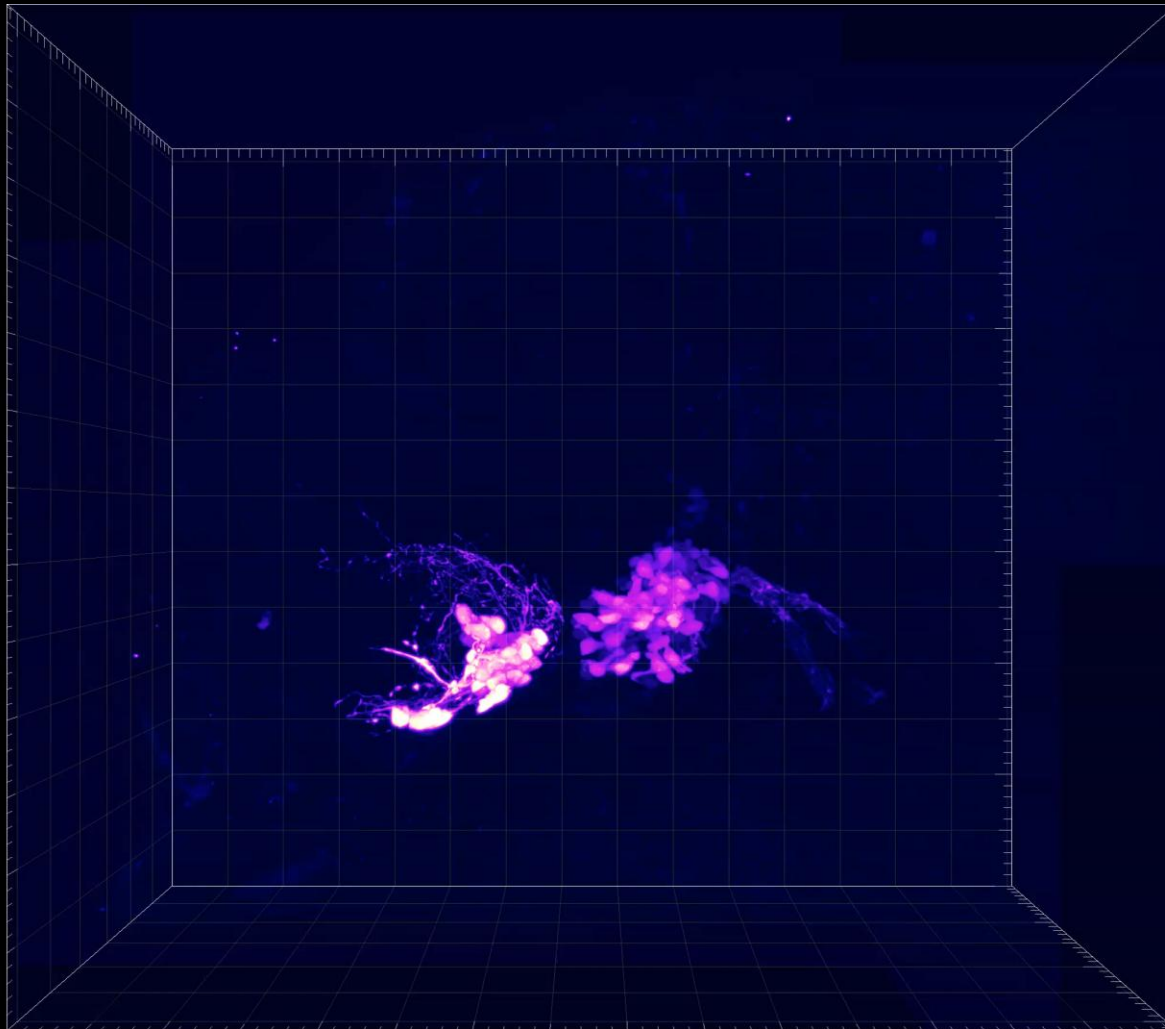
If you cannot improve your optics, enlarge the sample.

Expansion Factor 4 (1D) – 4×4 (2D) – $4 \times 4 \times 4$ (3D)

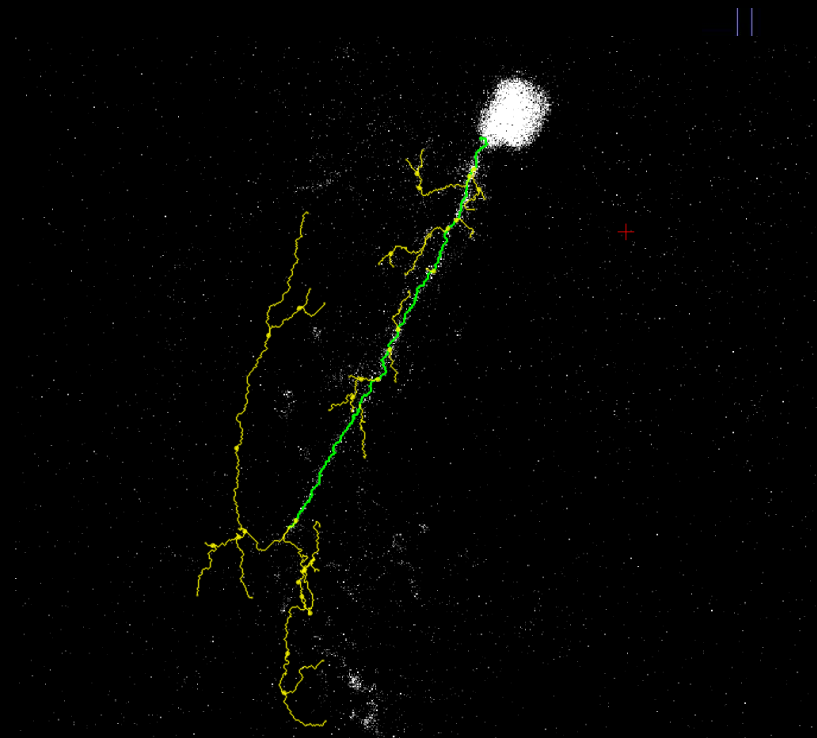




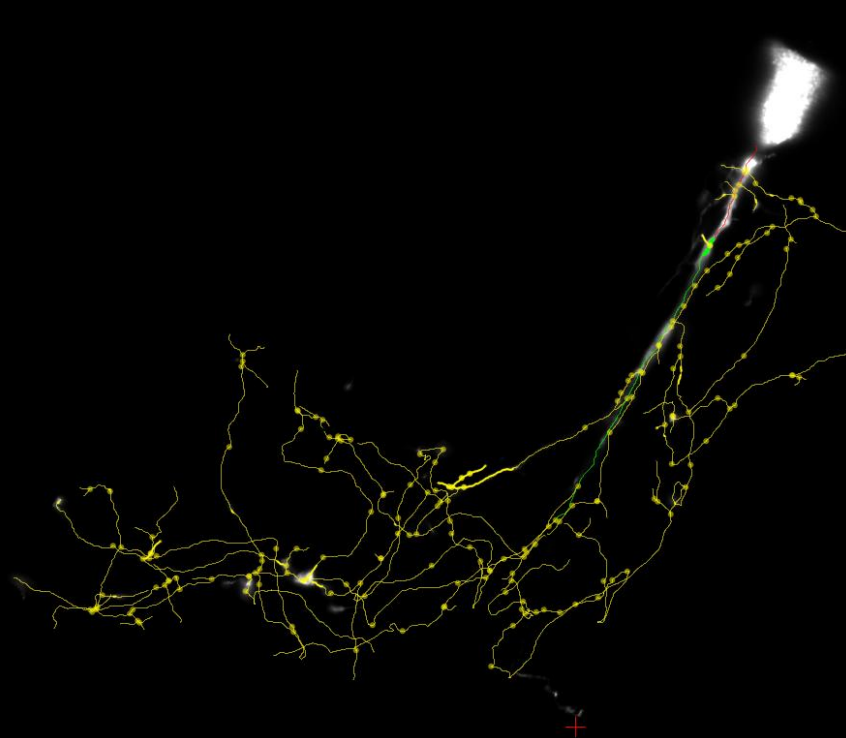
Video of a 3D view comprising 1687 slices. Volume size 1133 x 954 x 954 μm^3 (~113 GB)

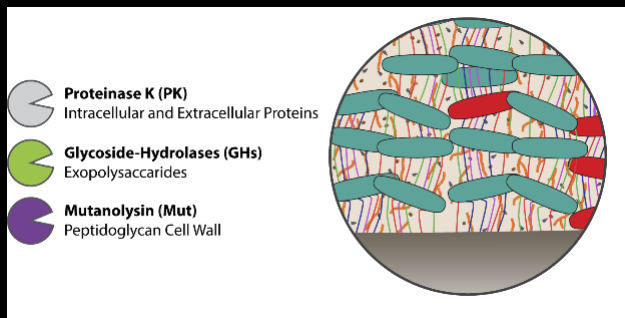
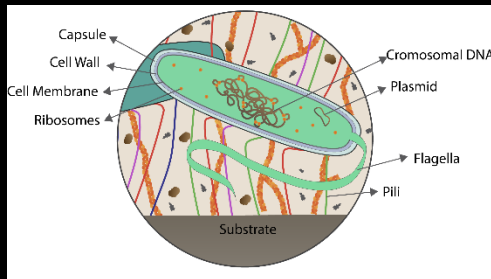
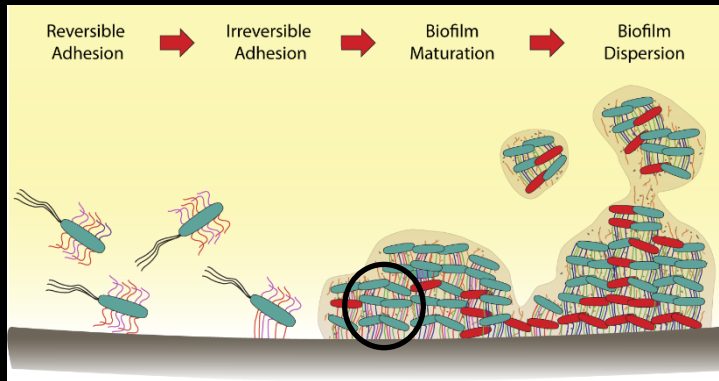


Confocal



ExM + LSFM

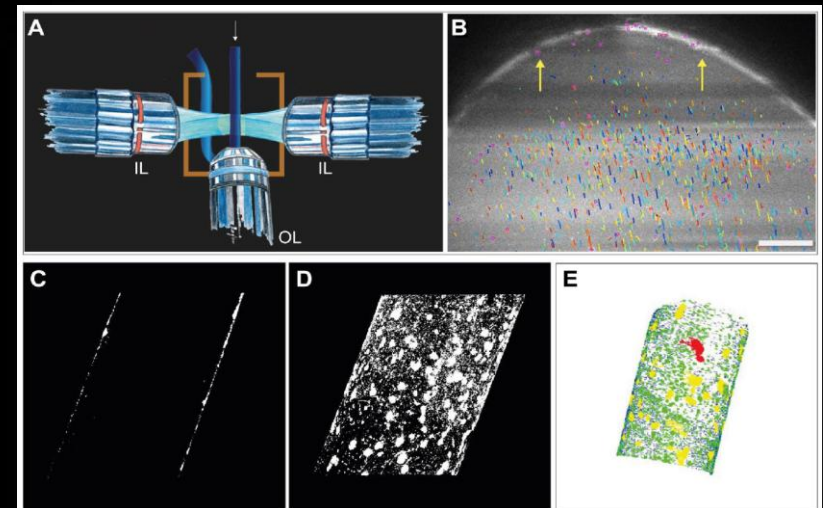




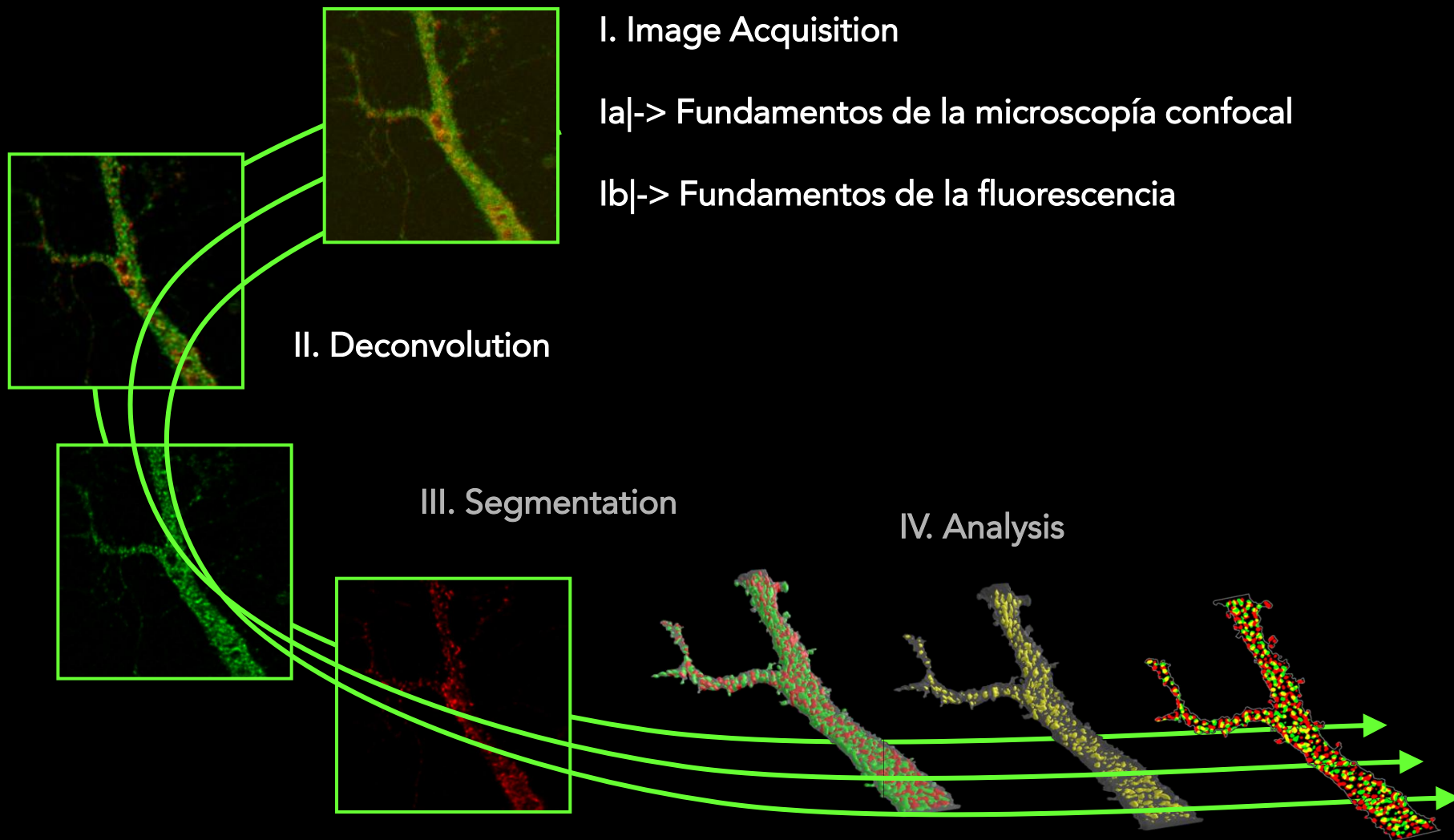
Dante Castagnini,
Biochemist



MSc Nicole Canales,
T. Médico, Microbiología



Canales et al. 2025, Microbial Pathogenesis





“It is very easy to answer many of these fundamental biological questions. You just look at the thing !

Make microscopes a hundred times more powerful and many problems of biology would be made very much easier.”

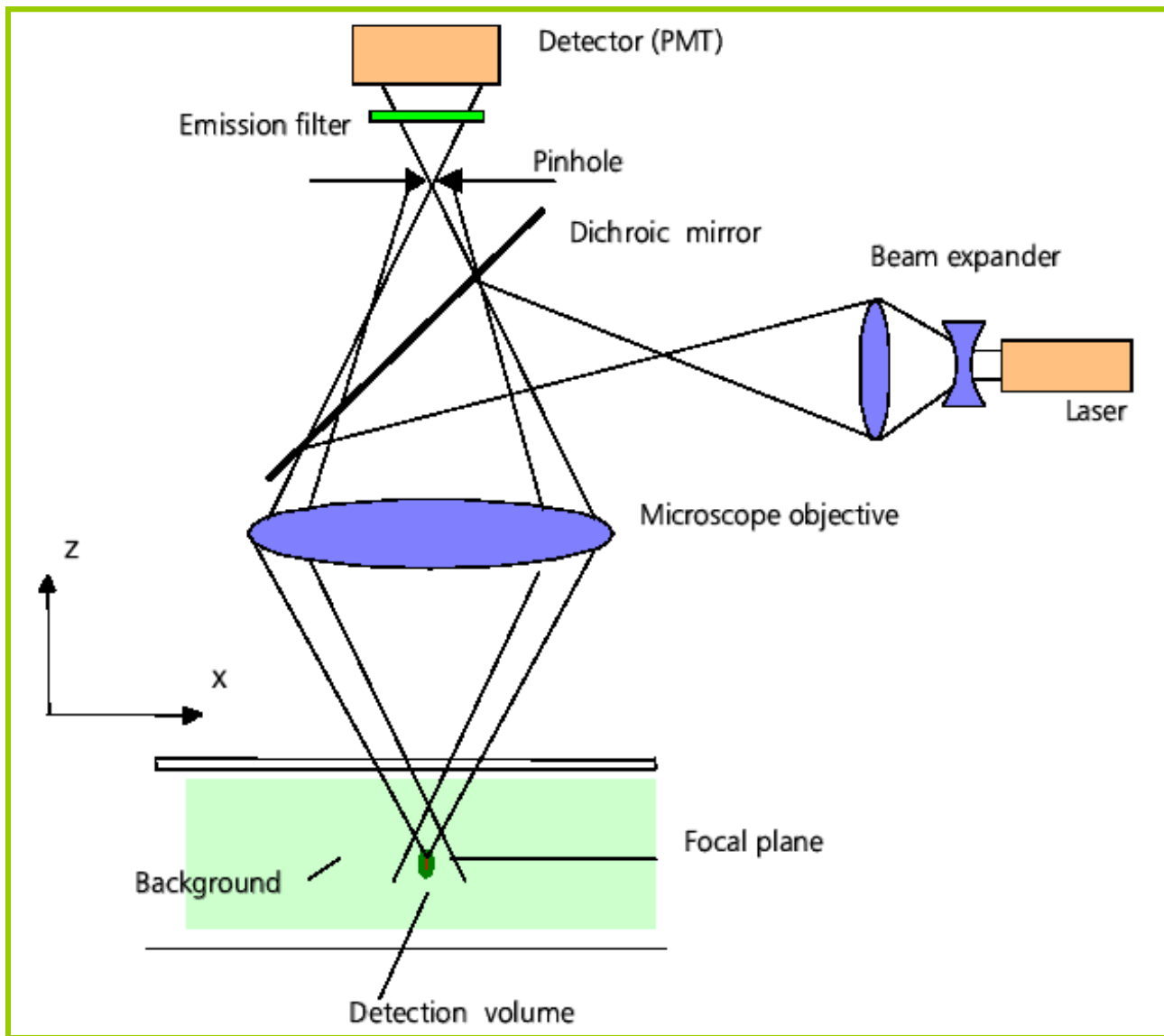
Richard Feynman (1918-1988)

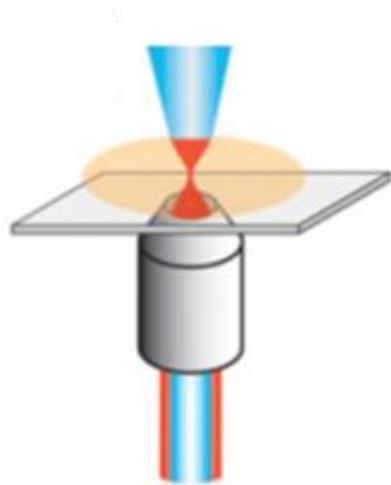


**Hans Janssen (1595),
Galileo Galilei (1610)**

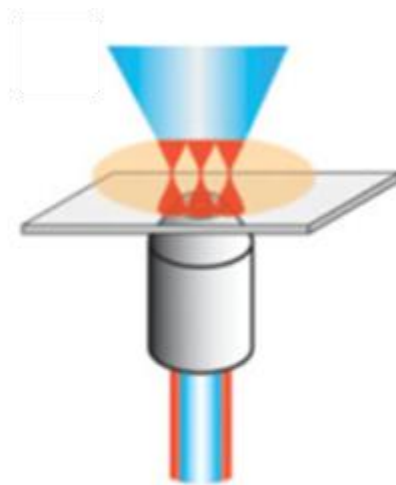


| -> Microscopy

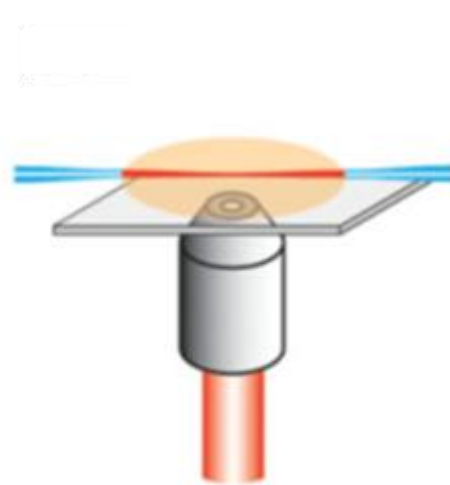




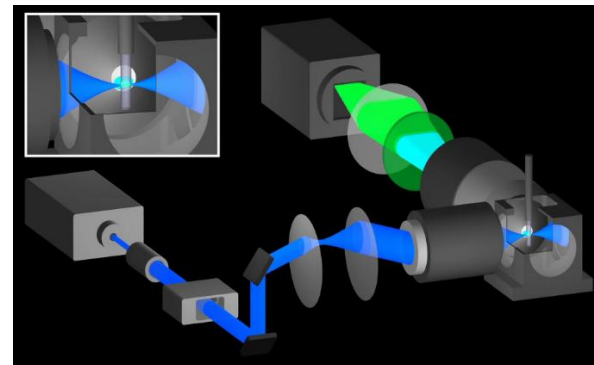
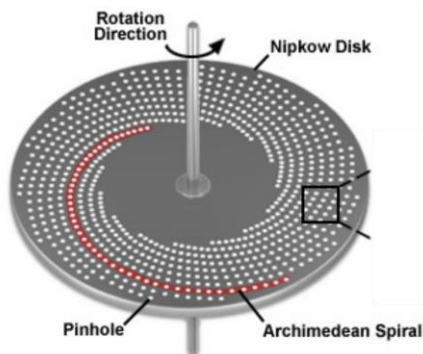
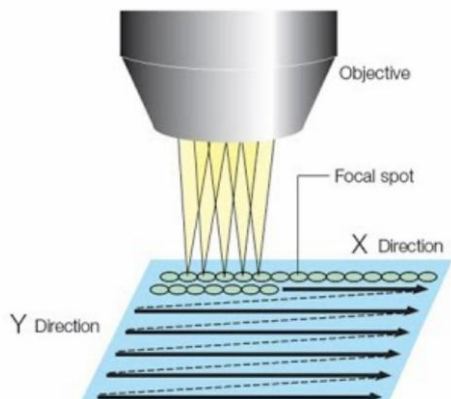
**Laser scanning
confocal**



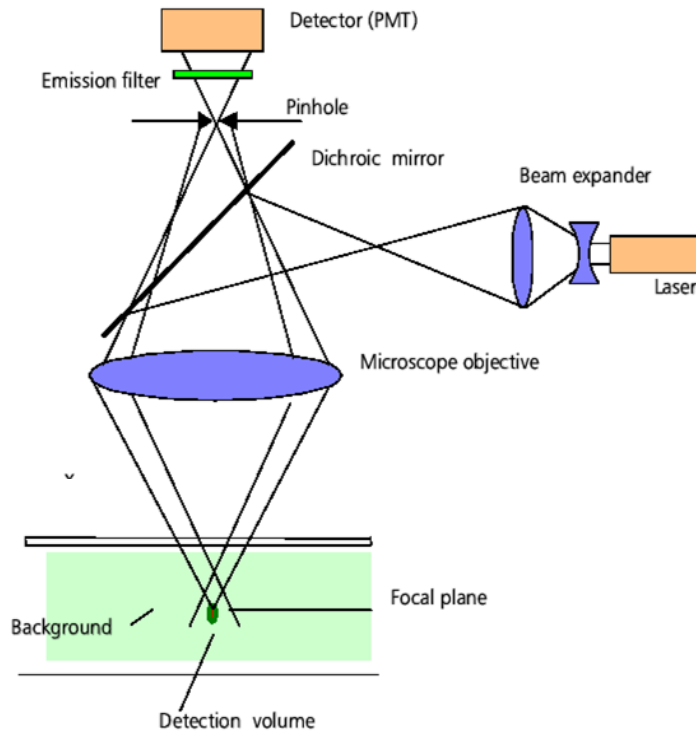
**Spinning disk
confocal**



Light sheet



|-> Spinning Disk Microscopy



confocal

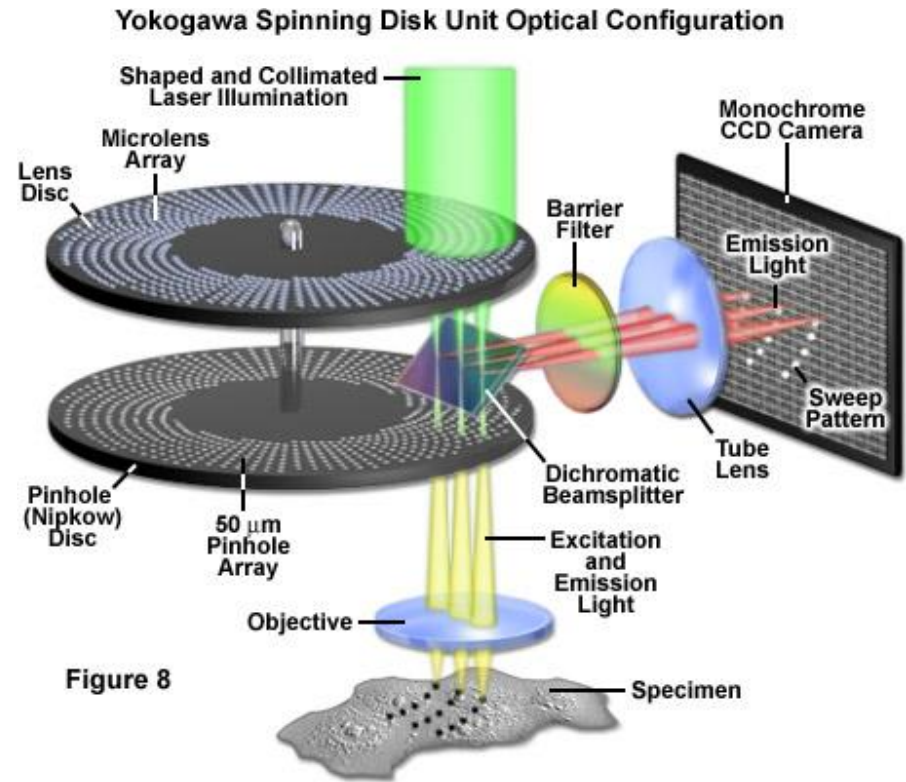
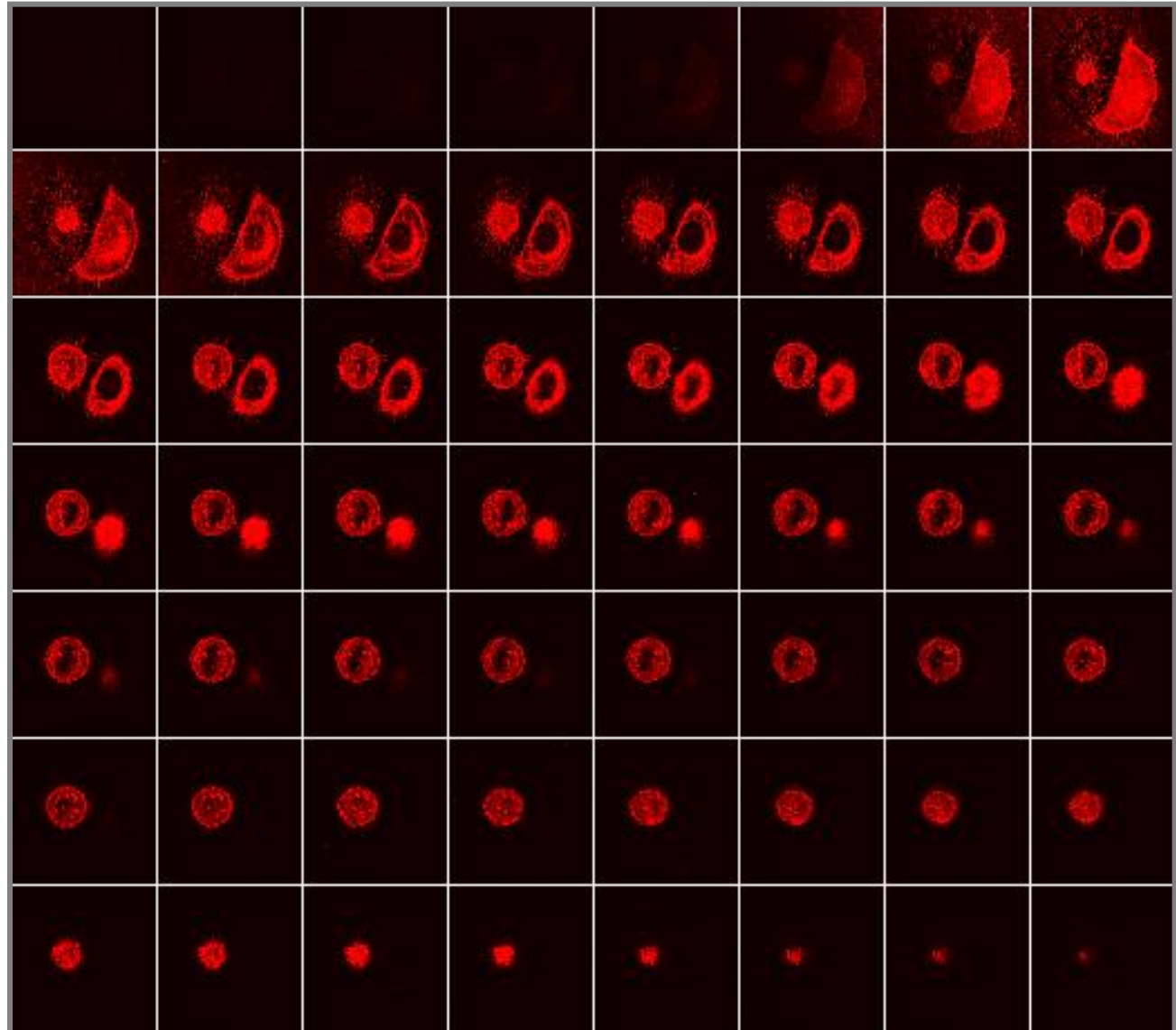


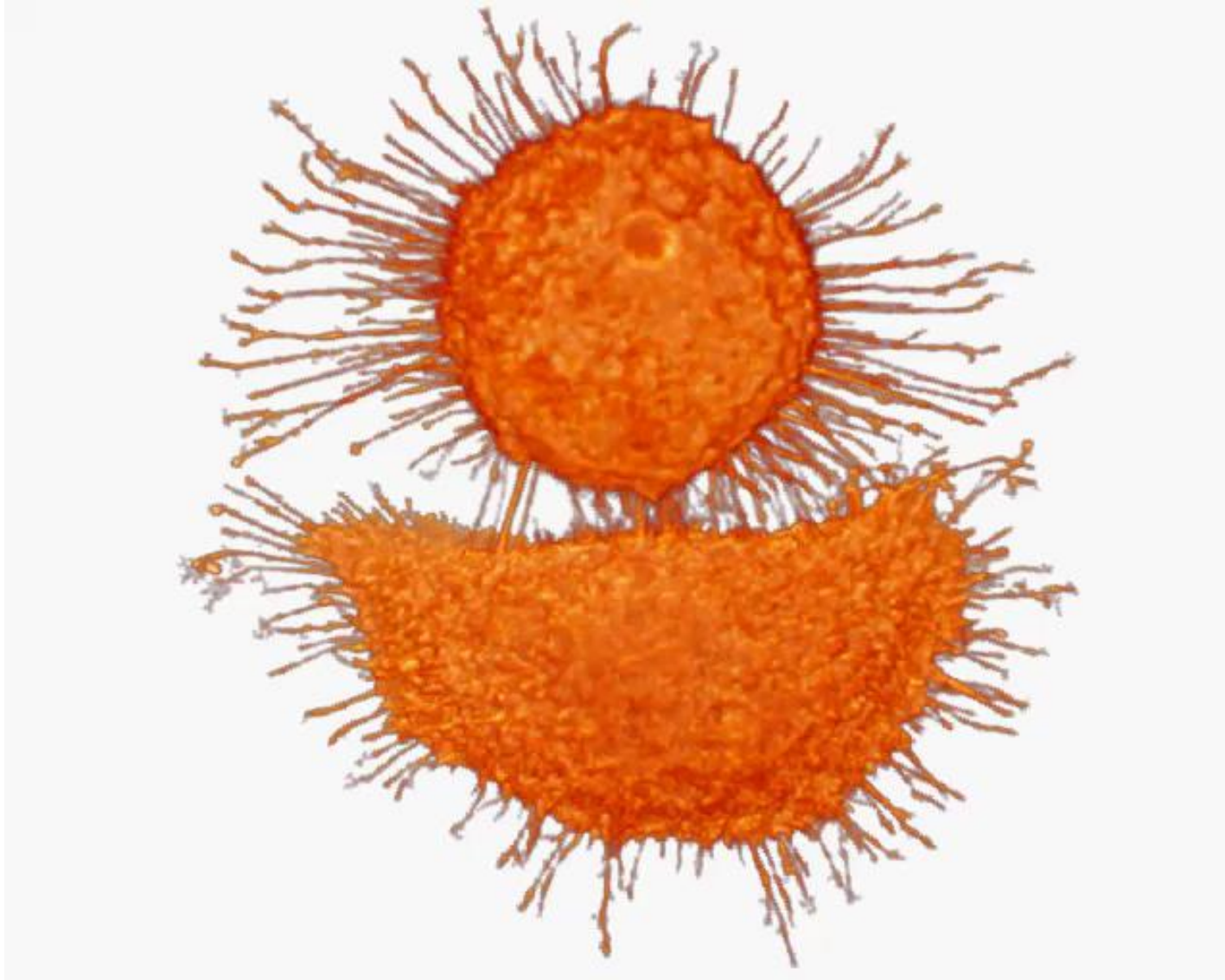
Figure 8

spinning disk

| -> Microscopy



| -> Microscopy



| -> Electron Microscopy

