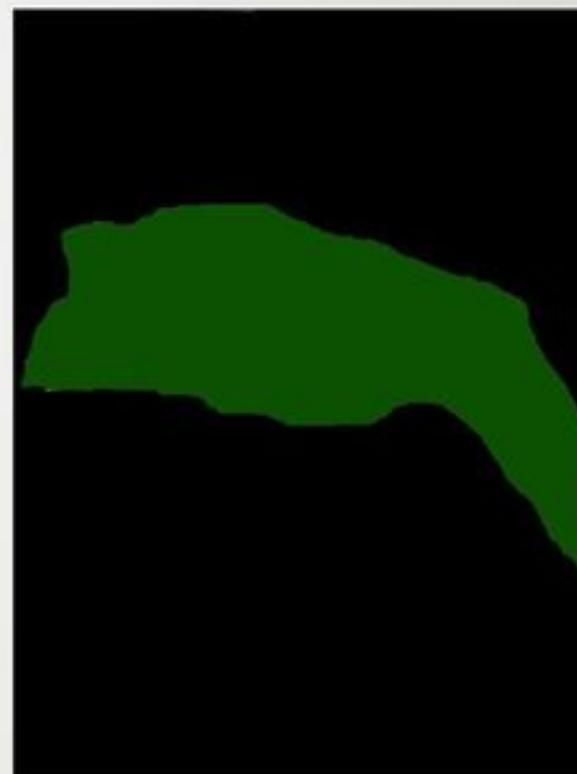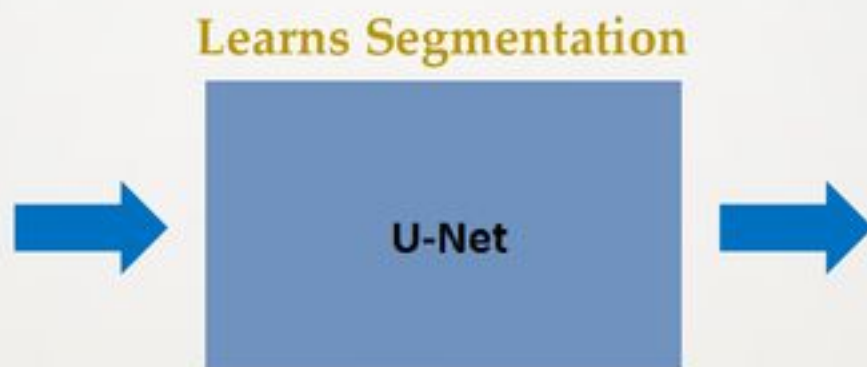# U-Net: Convolutional Network for Segmentation

Presented by: Chanon Chantaduly

# What does a U-Net do?
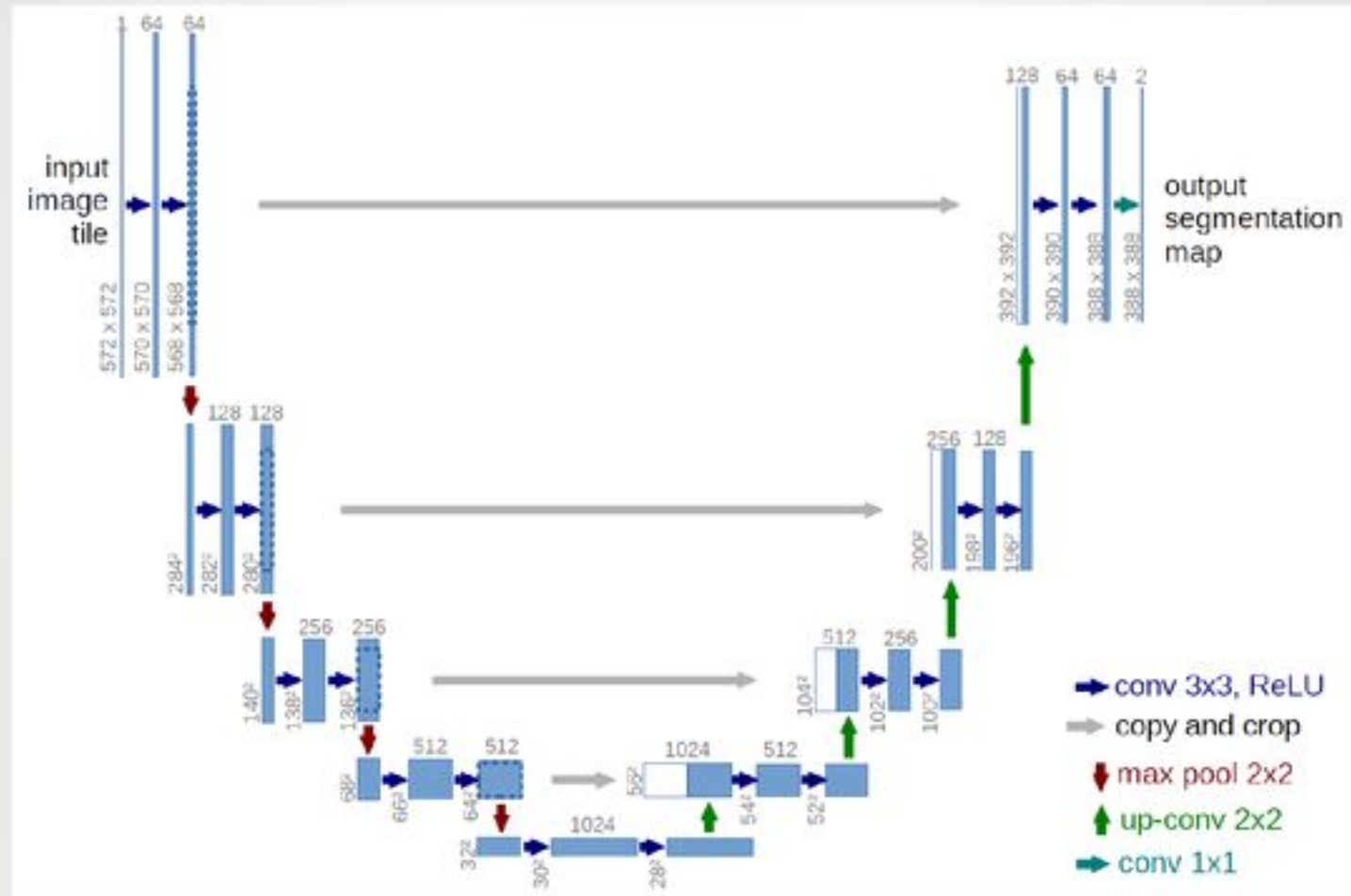


Input Image

Learns Segmentation

U-Net

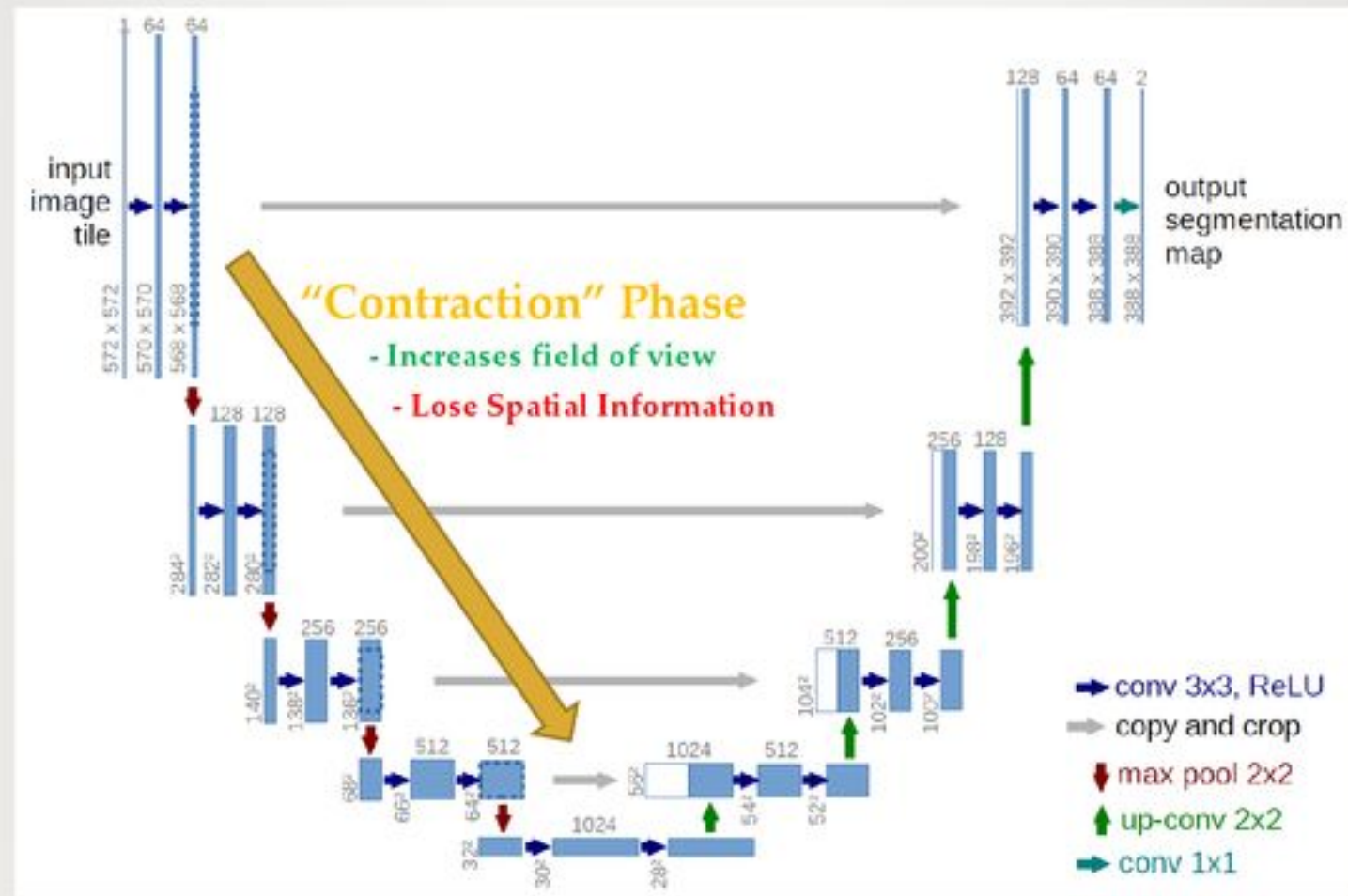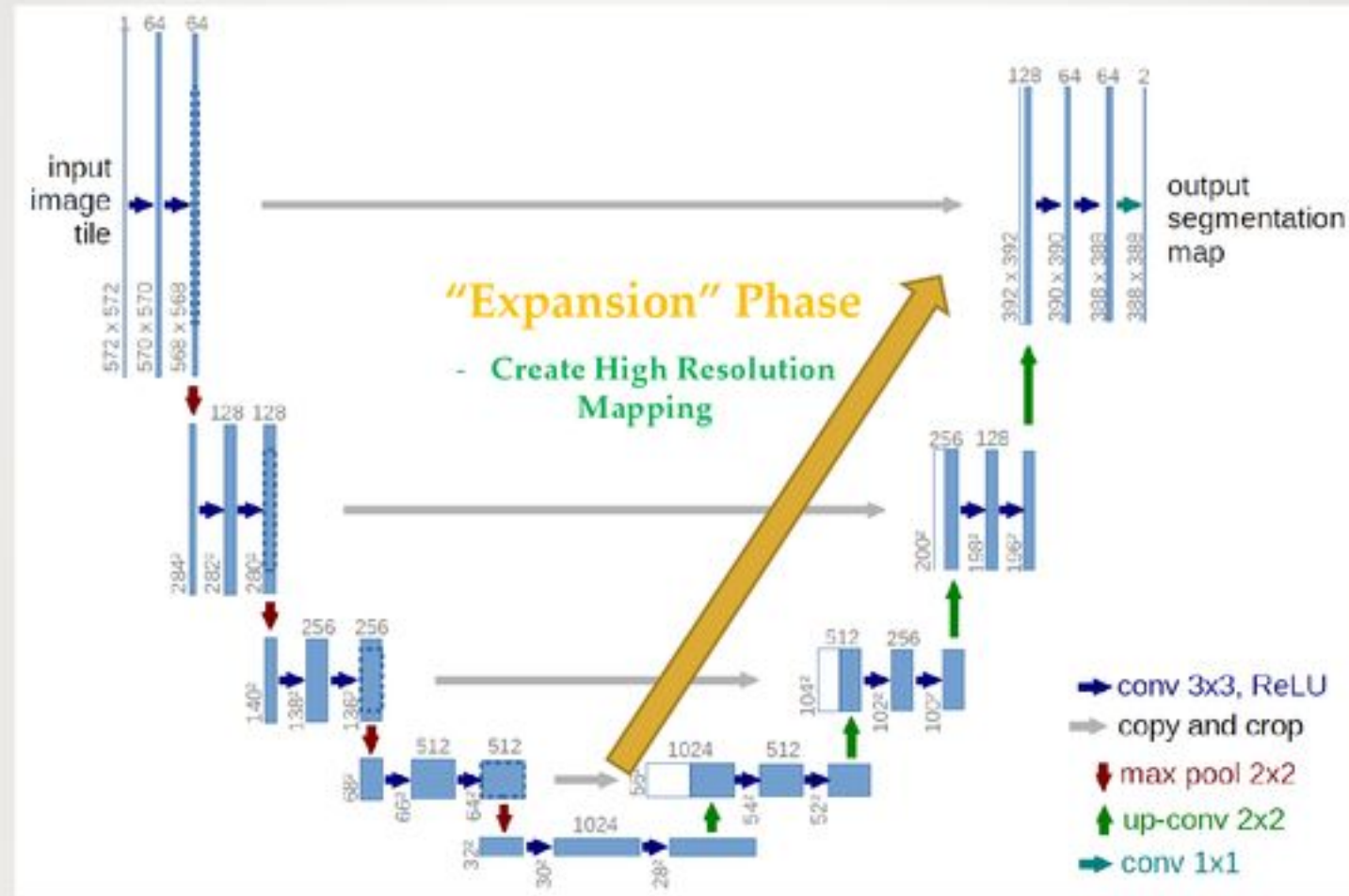Output Segmentation Map

# U-Net Architecture



Ronneberger et al. (2015) U-net Architecture

# U-Net Architecture



Ronneberger et al. (2015) U-net Architecture

# U-Net Architecture



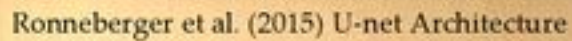Ronneberger et al. (2015) U-net Architecture

# U-Net Architecture



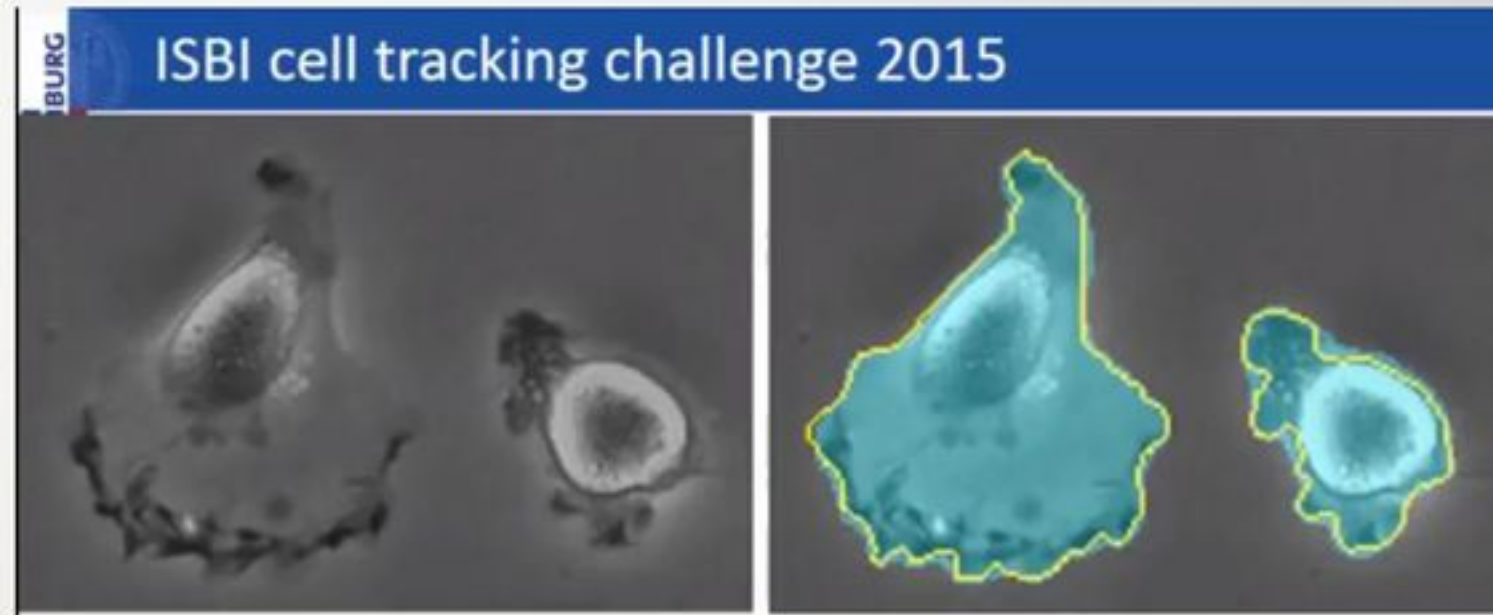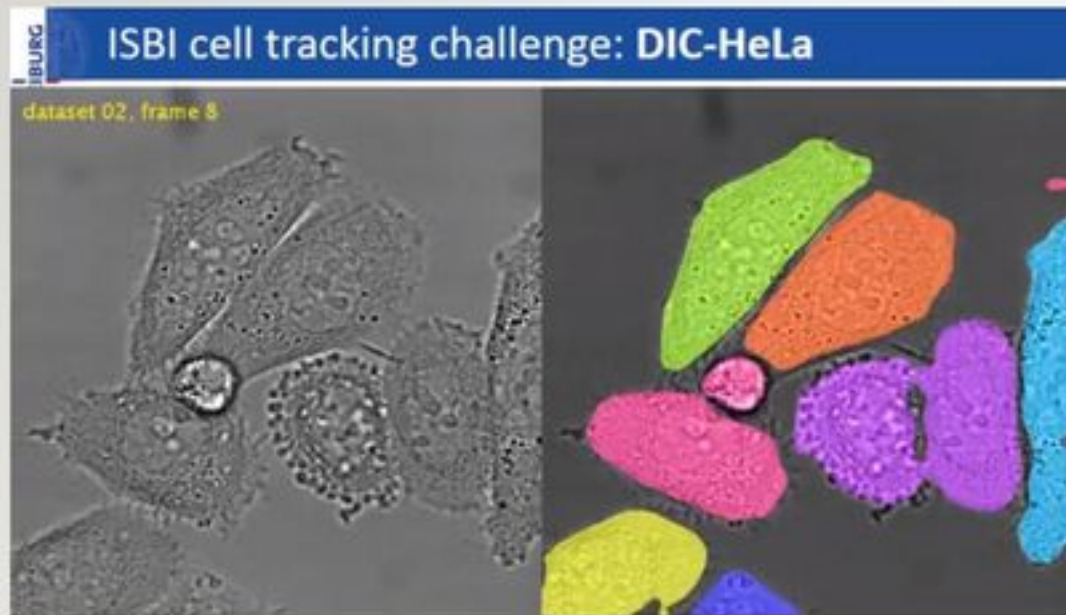Ronneberger et al. (2015) U-net Architecture

# U-Net Summary

- Contraction Phase

    - Reduce spatial dimension, but increases the "what."

- Expansion Phase

    - Recovers object details and the dimensions, which is the "where."

- Concatenating feature maps from the Contraction phase helps the Expansion phase with recovering the "where" information.

# Author Results



ISBI cell tracking challenge: **DIC-HeLa**
dataset 02, frame 8

ISBI cell tracking challenge 2015

Ronneberger et al. (2015) ISBI cell tracking challenge