U-Net: Convolutional Network for Segmentation
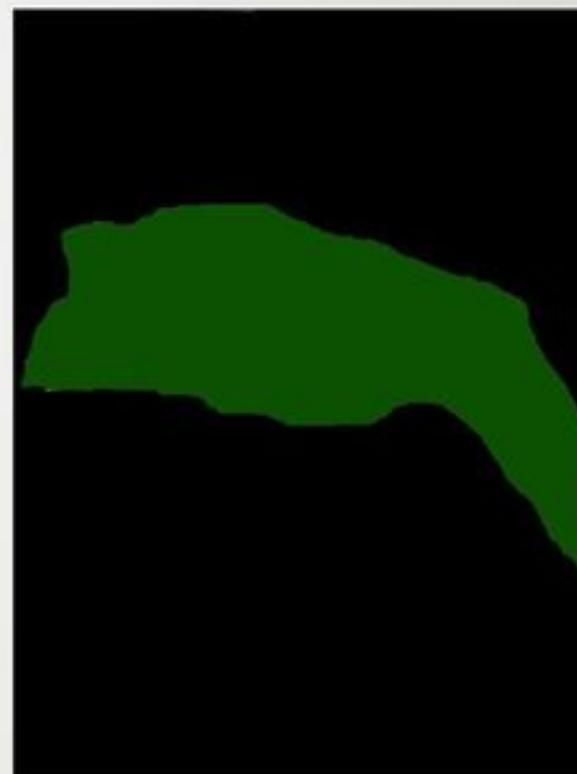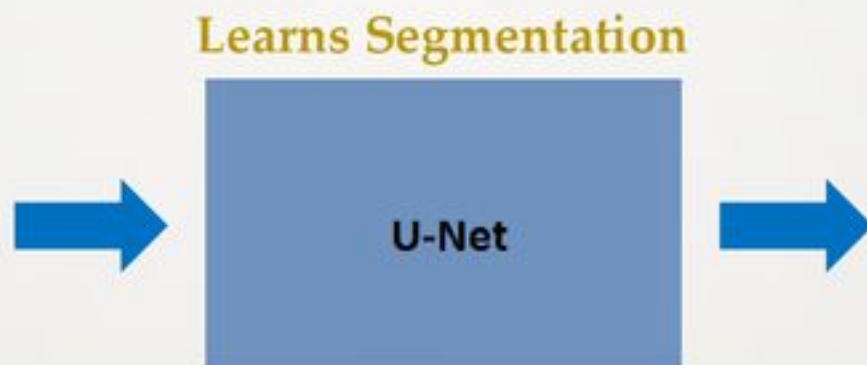
Presented by: Chanon Chantaduly

What does a U-Net do?
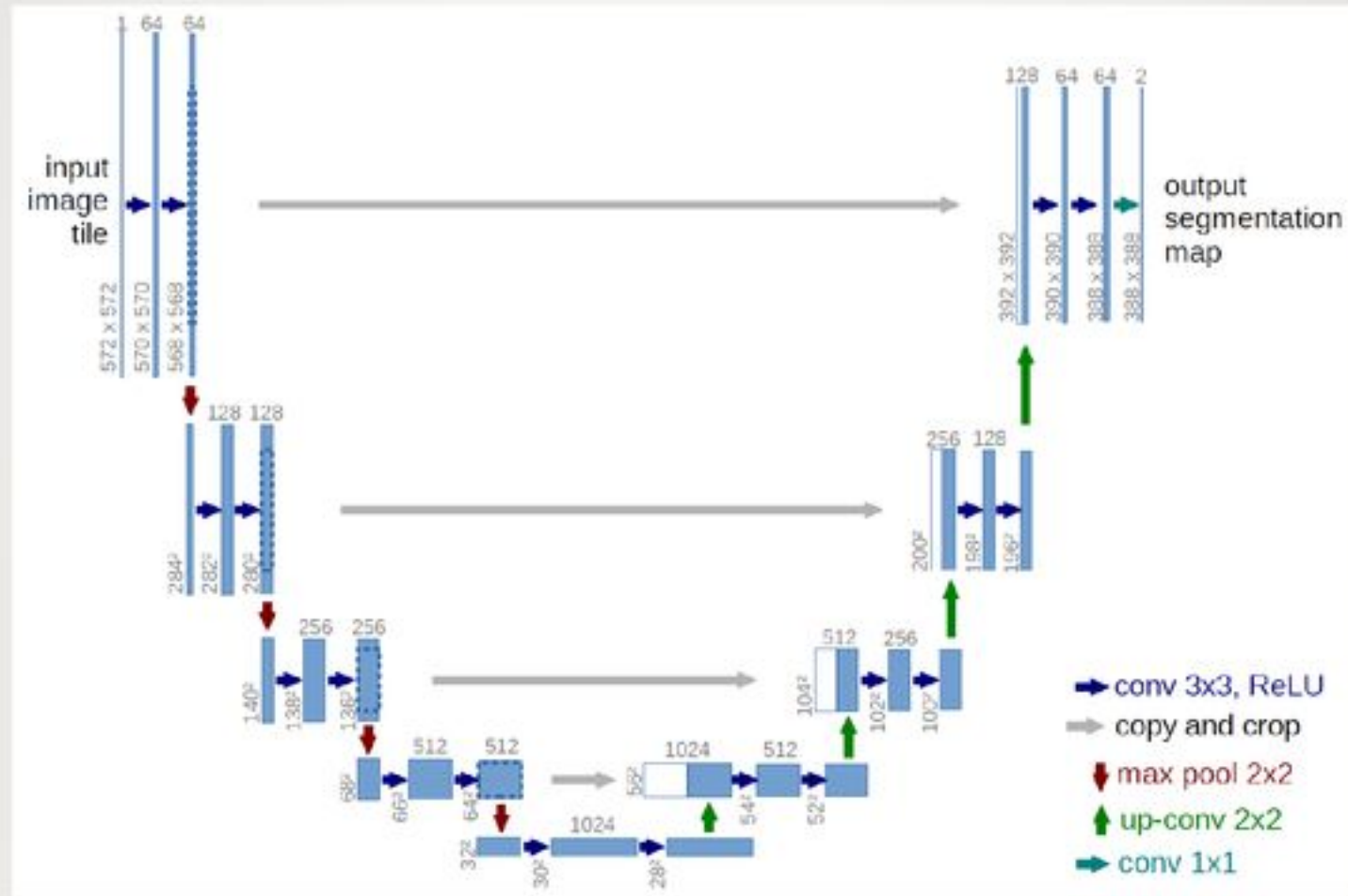

Learns Segmentation

U-Net

Input Image

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
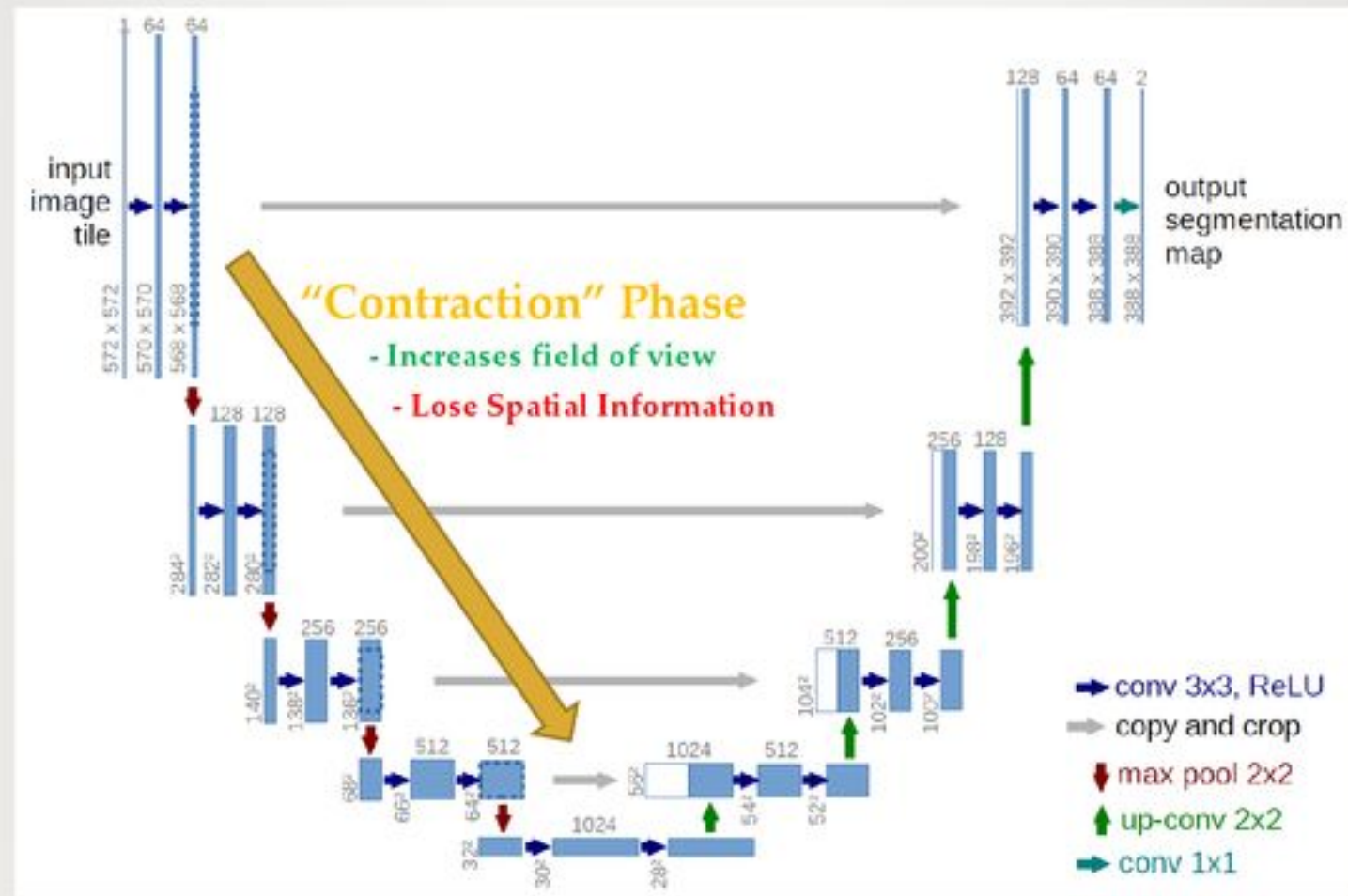
Ronneberger et al. (2015) U-net Architecture
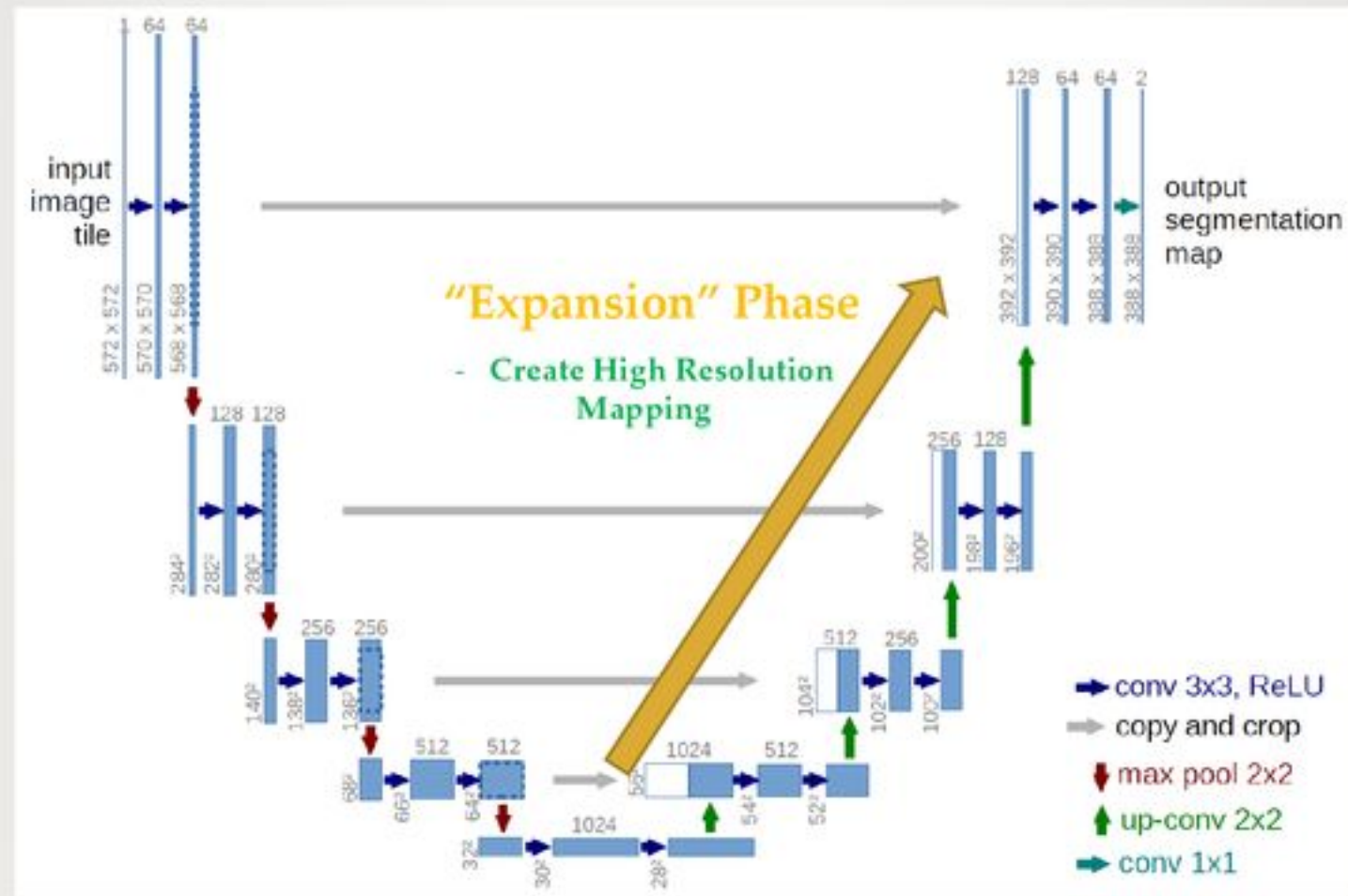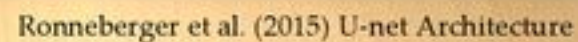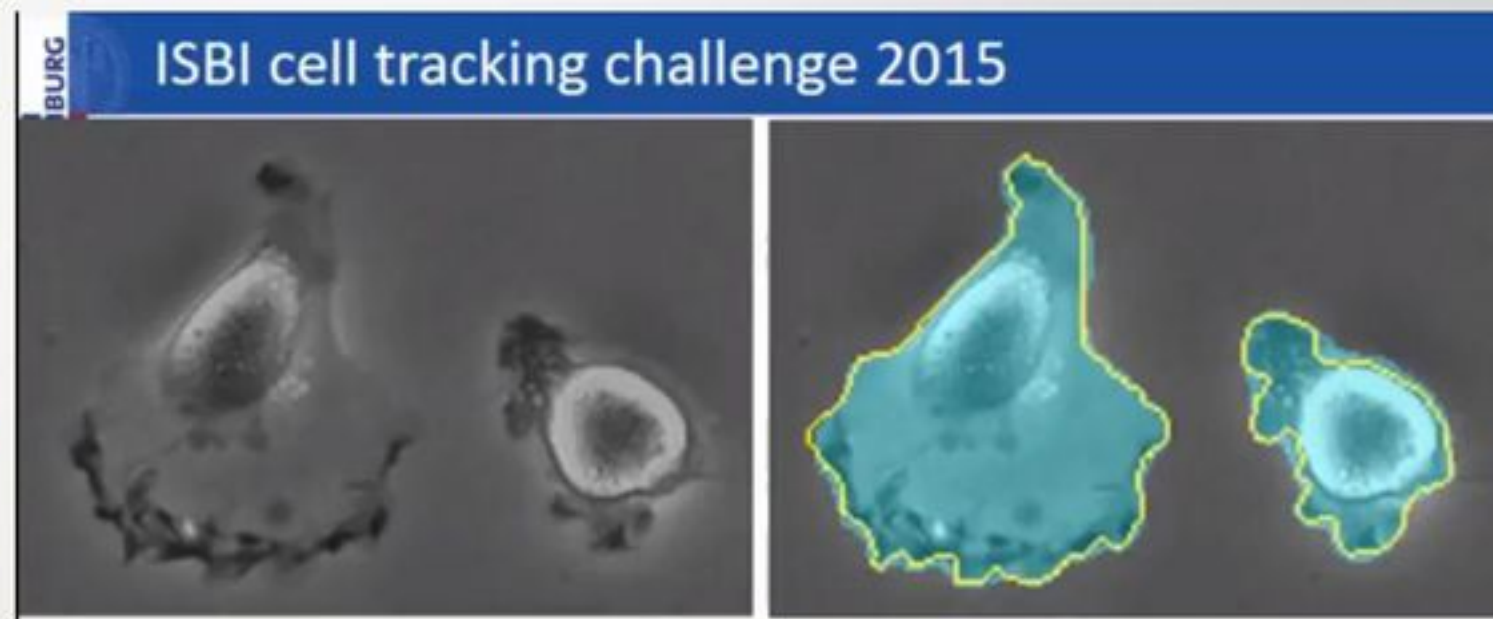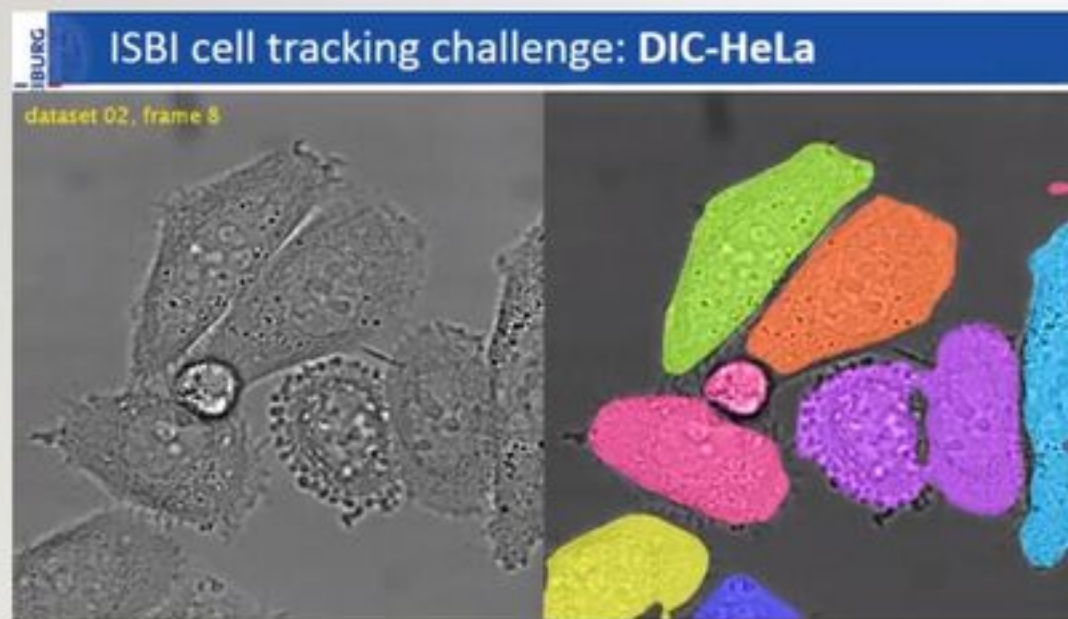
U-Net Summary

- 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

Ronneberger et al. (2015) ISBI cell tracking challenge