A Science Gateway and Repository of Deep Learning Neural Networks for Biomedical Image Processing
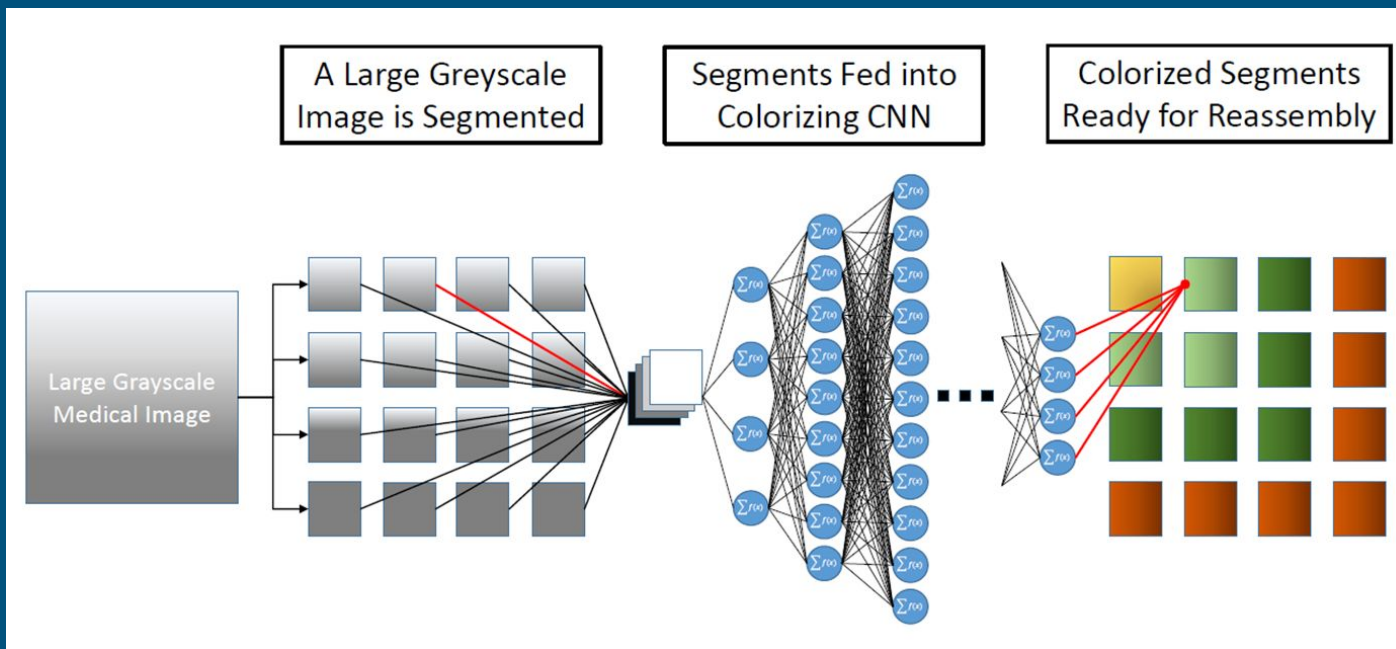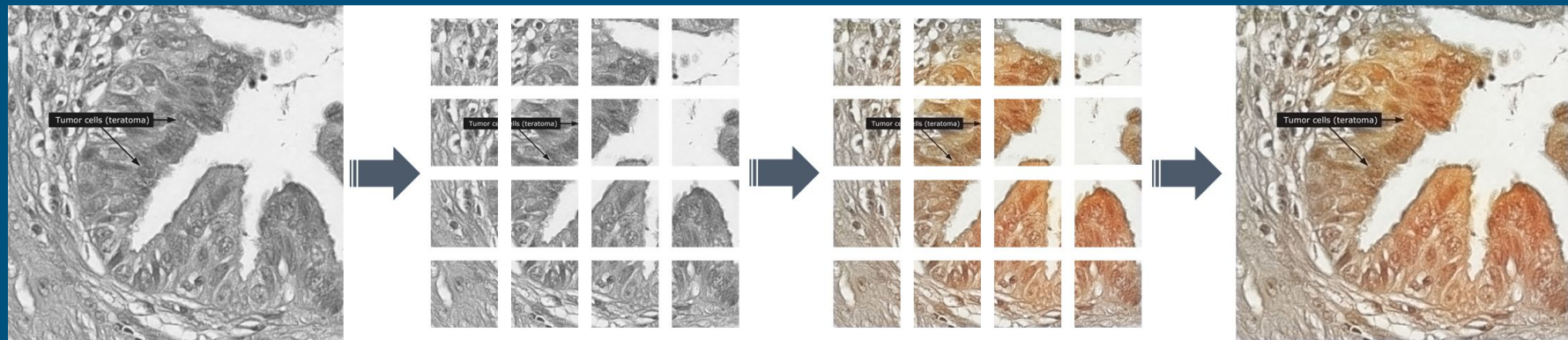
Karen Cañas Hernandez
Hood College

DLNN

- Deep learning convolutional neural network to perform biomedical image segmentation tasks through colorization
- Adapt existing code to Blue Waters Architecture
- Enhance a pathologist's ability to quickly identify important features in MRI and CT scans

DLNN

DLNN

Challenges

- NCI at Fort Detrick, Frederick, MD
- Adjust Network
- Parallelize the serial process
- Containerize the model
- Docker

Challenges

- Science Gateway
- Satellite Remote Sensing
- Image Registration
- Cancer Classification
- Parallelize across multiple computing nodes and GPUs

Blue Waters Petascale Institute

- MPI
- CUDA
- CUDA Aware MPI
- Jobs
- XE and XK nodes
- Architecture
- GPUs