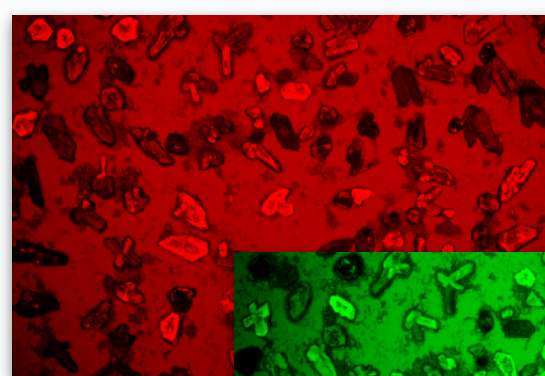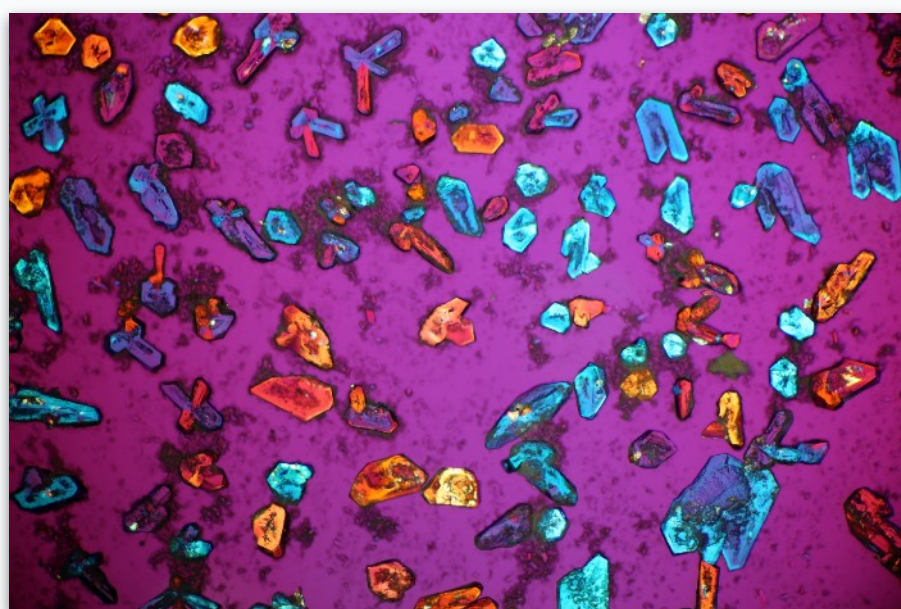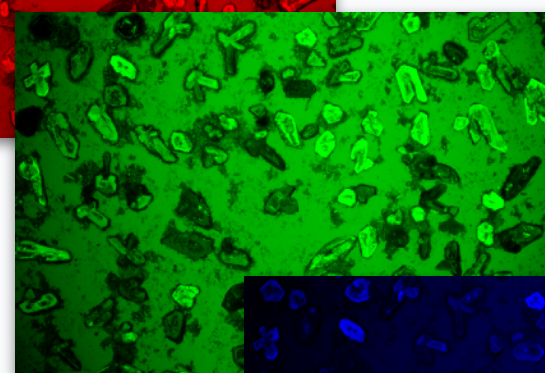# MIPAR™
Release Notes
1.5.0
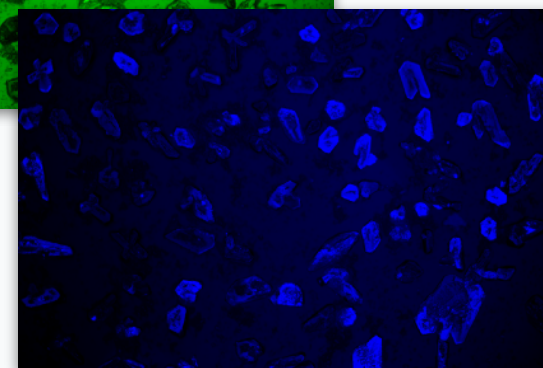
Multi-Channel Image Overhaul

Up to 50 Channels
MIPAR is the first commercial software to support up to 50-channel images in standard and manufacturer formats.
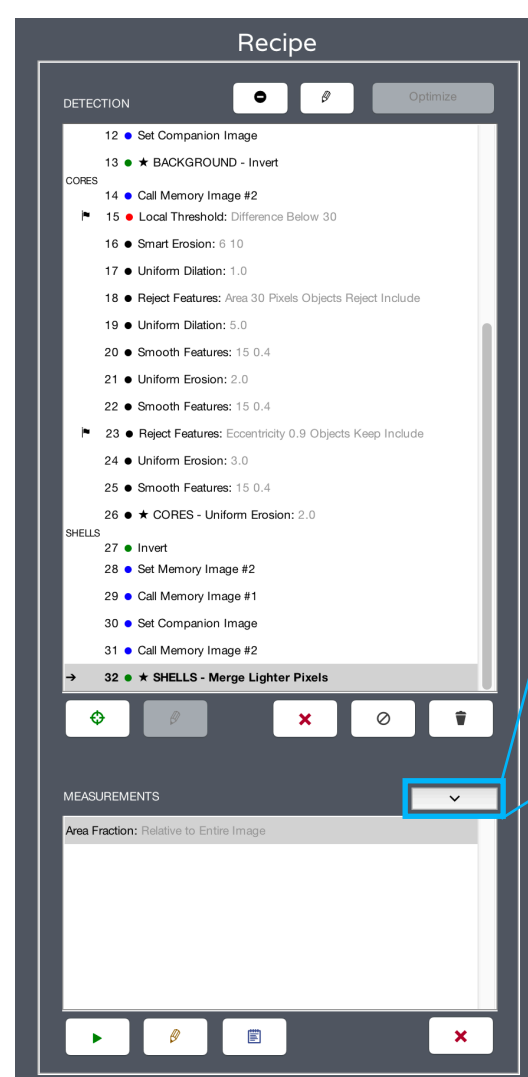
c1

c2

c3

c50!

Call Channels with "c"
When entering a channel operation, you may now also refer to channels as c1, c2, c3, c4, etc.

Hide Recipe Measurements Panel

More Room to Work
The measurements panel in the recipe is now hidden by default, giving you 50% more space to create and edit your algorithms.

There When You Need Them
The measurements panel will automatically reappear when measurements are added. You can also show/hide any time with the new control.

SHOWN   **HIDDEN**
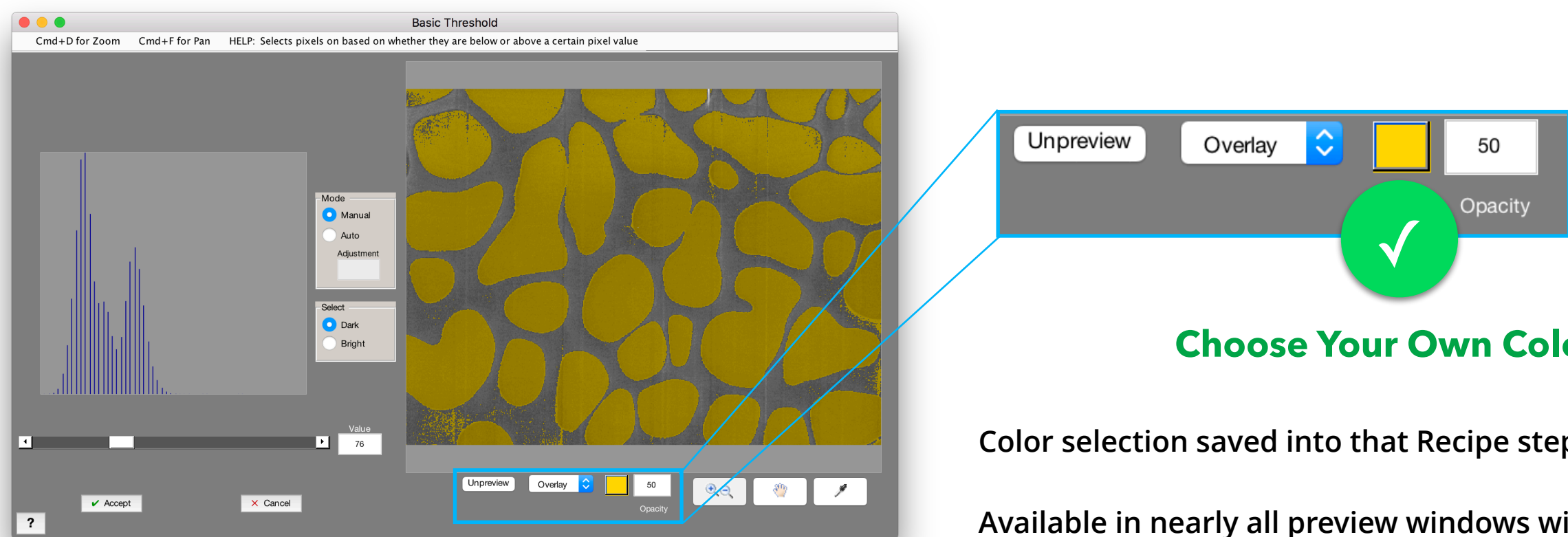
Continuous Sliders

Value 76
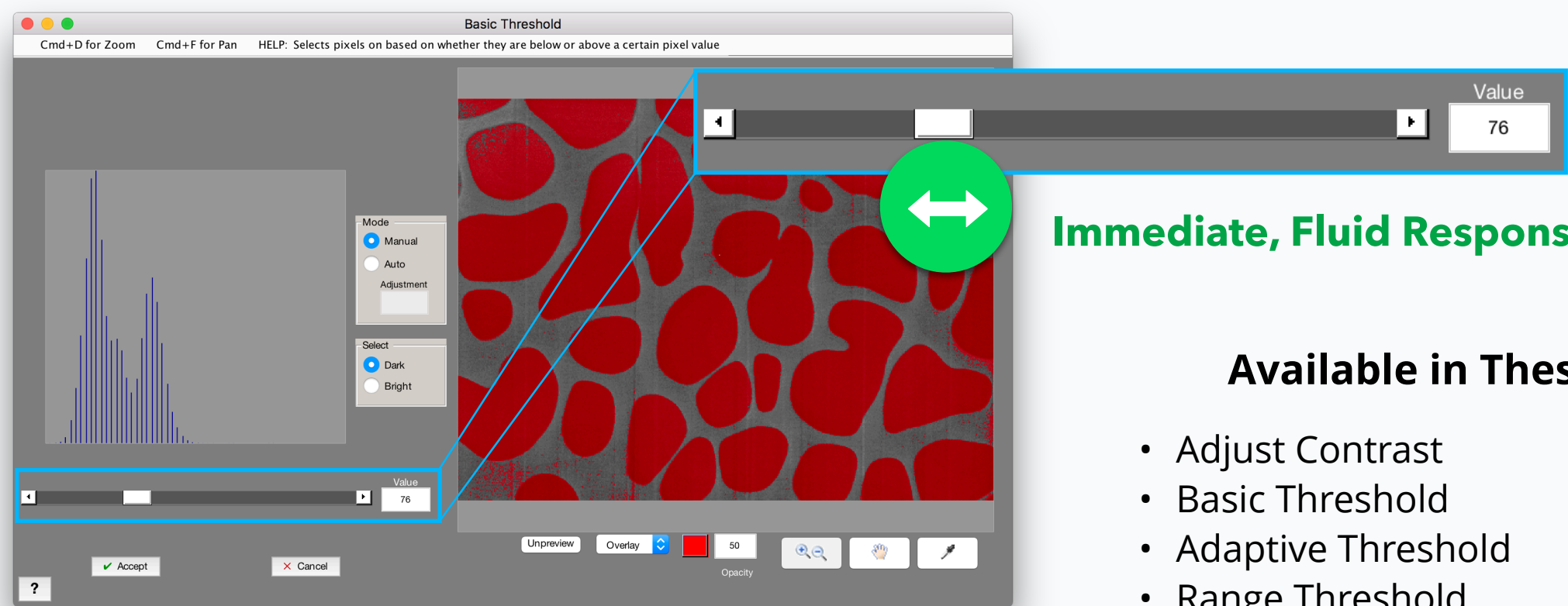
Immediate, Fluid Response

Available in These Functions:

- Adjust Contrast
- Basic Threshold
- Adaptive Threshold
- Range Threshold
- EM Threshold
- Find Edges
- Uniform Dilation
- Uniform Erosion
- Find Local Min
- Find Local Max

- Throughout 3D Toolbox

Preview Window Color Selection

Unpreview | Overlay | 50 — Opacity

Choose Your Own Color

Color selection saved into that Recipe step

Available in nearly all preview windows with a Viewing Mode dropdown

Color-Code Global Measurements

Rows color-coded to their Layers

Layer	Area Fraction (%)	Number of Features	Area (um^2)
Cortex	56.5510	1	230166
Stele	14.7200	1	59912
Vessels	3.4750	12	14142
Air Spaces	13.1210	21	53402
Cell Walls	10.7750	2	43857
Cells	11.5150	569	46865

Select cells and "Cmd+C" to copy — Copy All

OLD

Layer	Area Fraction (%)	Number of Features	Area (um^2)
Cortex	56.5510	1	230166
Stele	14.7200	1	59912
Vessels	3.4750	12	14142
Air Spaces	13.1210	21	53402
Cell Walls	10.7750	2	43857
Cells	11.5150	569	46865

Select cells and "Cmd+C" to copy — Copy All

NEW

Speed Settings: Smart Cluster and Color Cluster

Allows you to control speed vs. precision of each function

Smart Cluster

Color Cluster
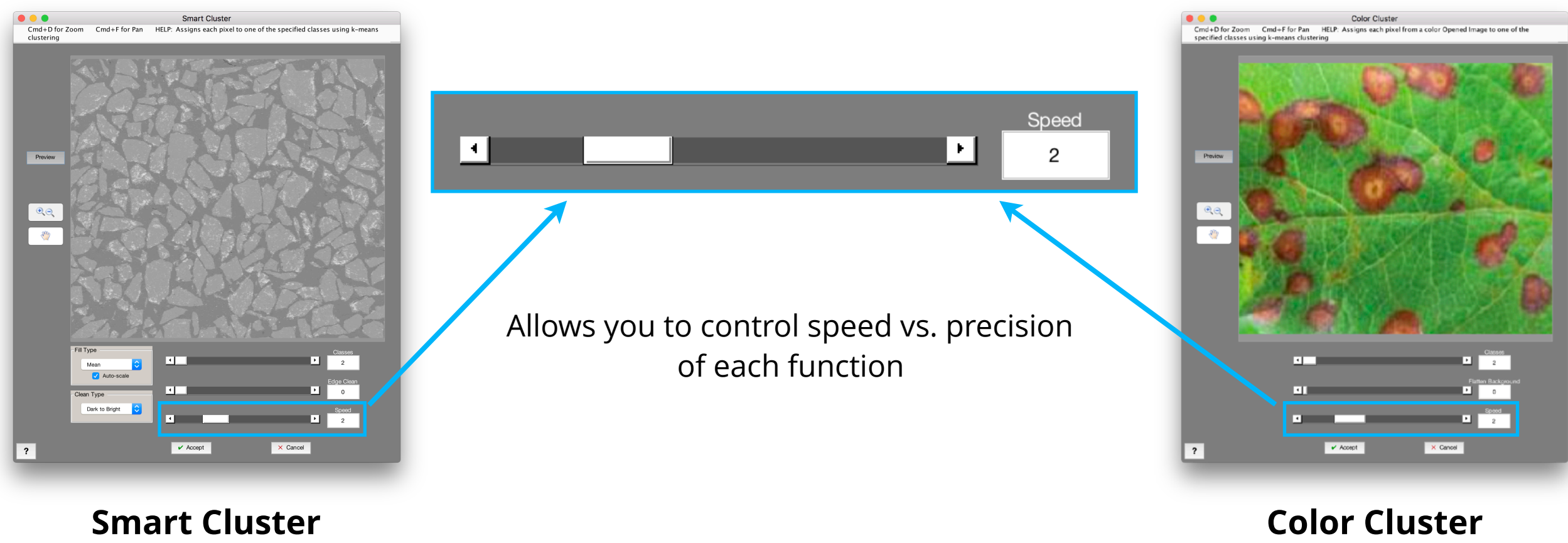
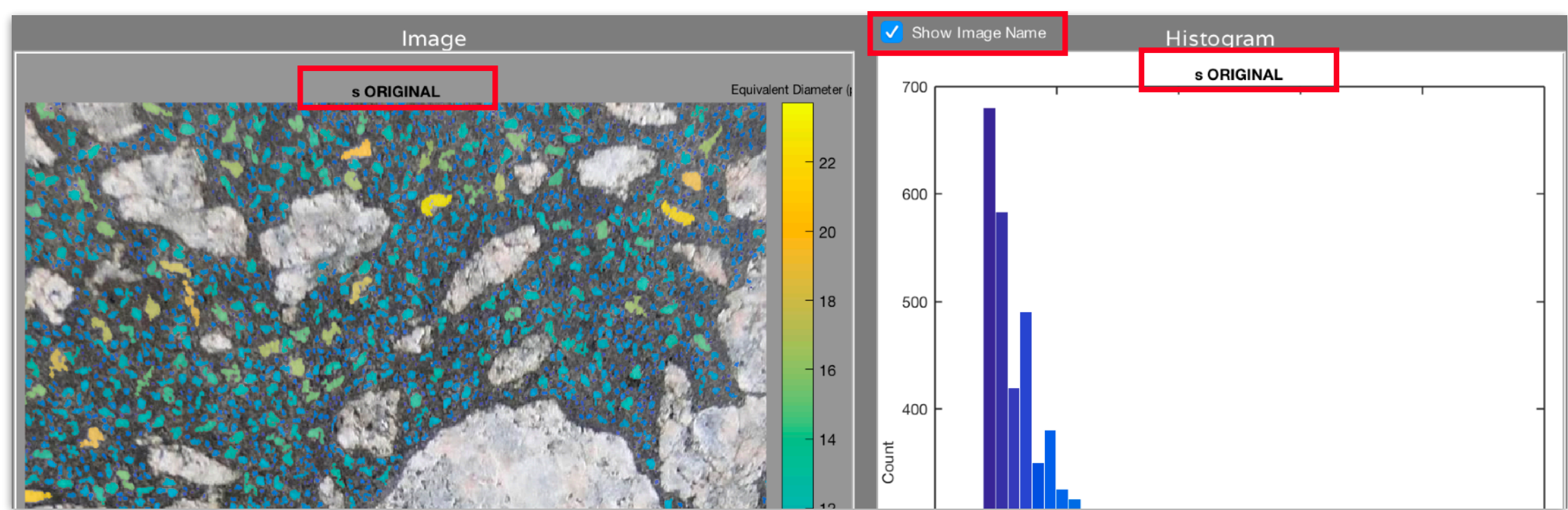# Feature ID Labelling: Percentage Control

All Feature IDs Shown

Top 40% of Feature IDs Shown
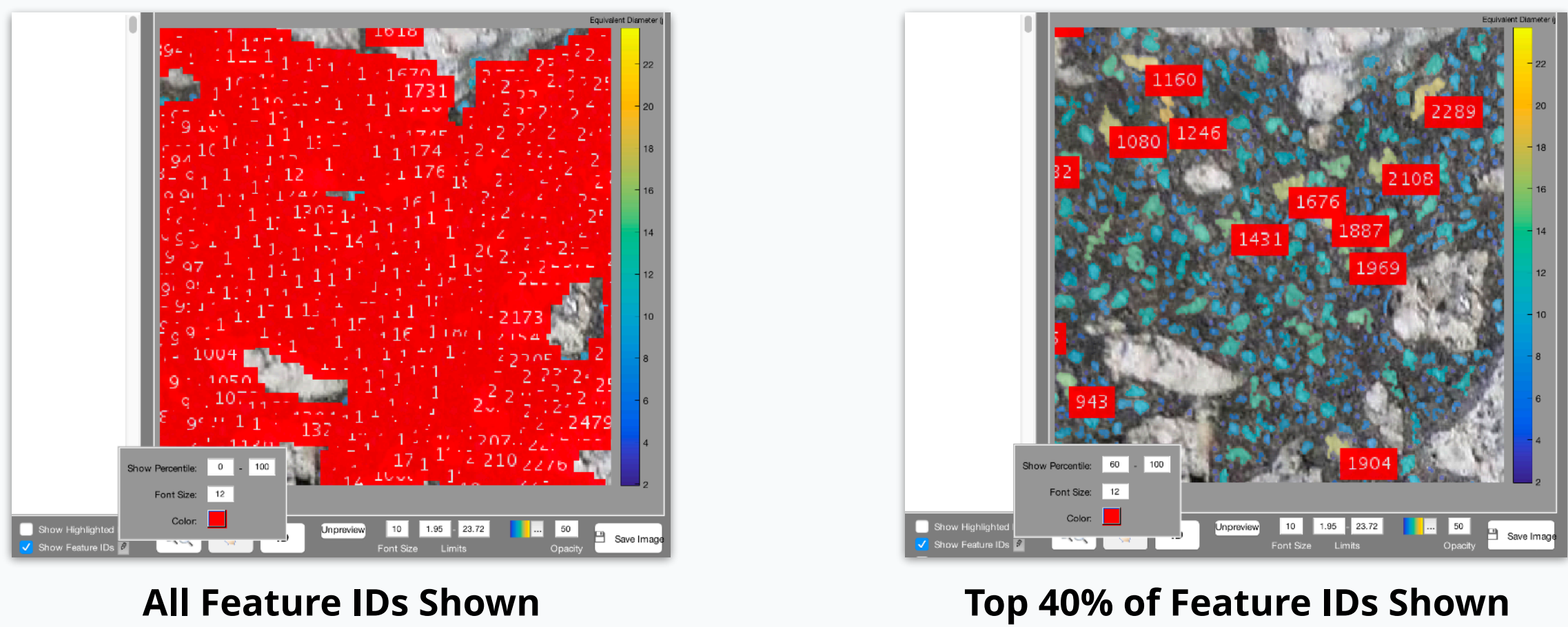
Name on Image and Histogram

Choose to print the image name above image and histogram in both Color by Measure and Local Measure

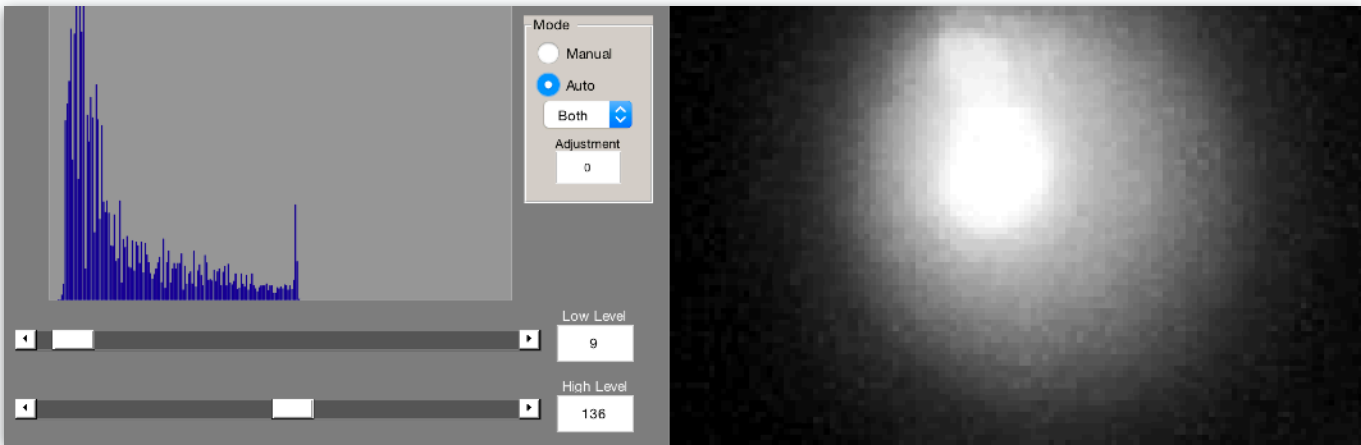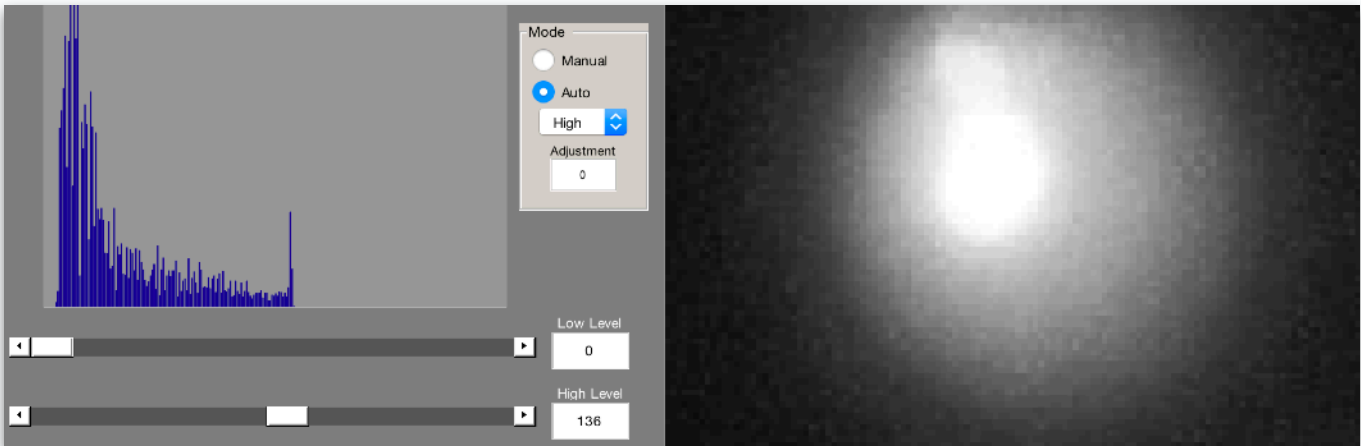# Adjust Contrast: Auto-Min _and_ Auto-Max

Both

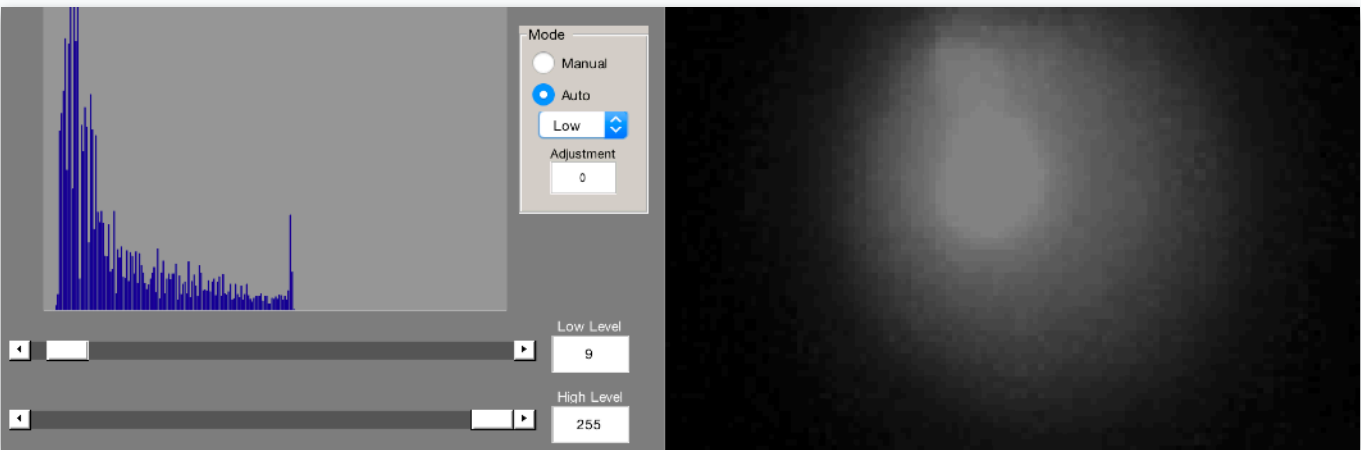Low and high pixel limits are both set automatically. Useful for normalizing contrast.

High ᴺᴱᵂ

High pixel limit is set automatically and low limit is left at 0. Useful for white balancing backgrounds.
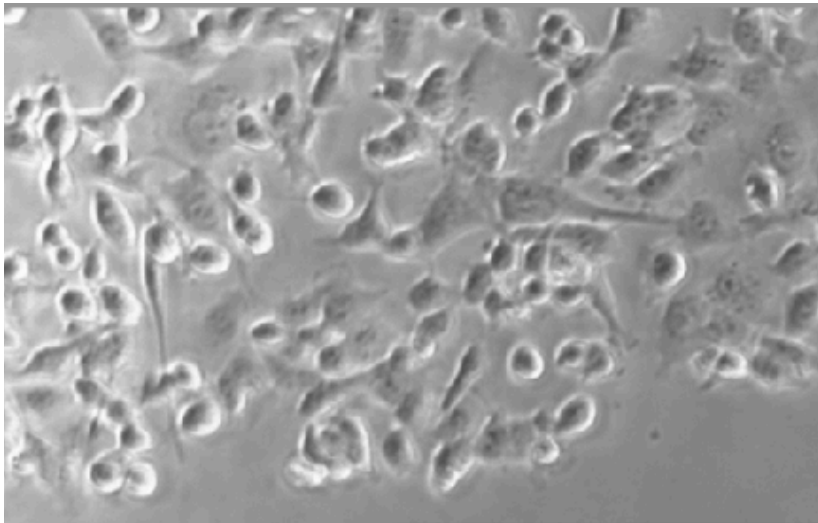

Low ᴺᴱᵂ

Low pixel limit is set automatically and high limit is left at 255. Useful for black balancing backgrounds.
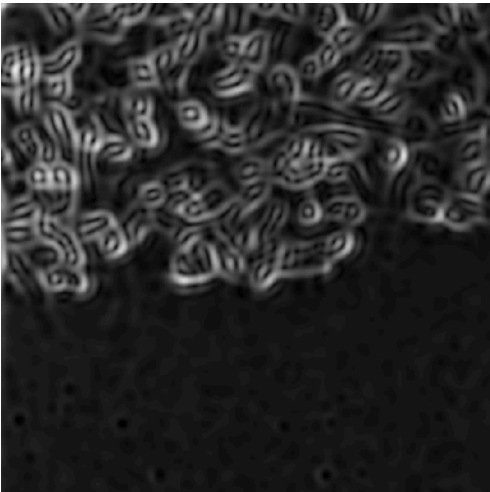

New Function: Find Texture

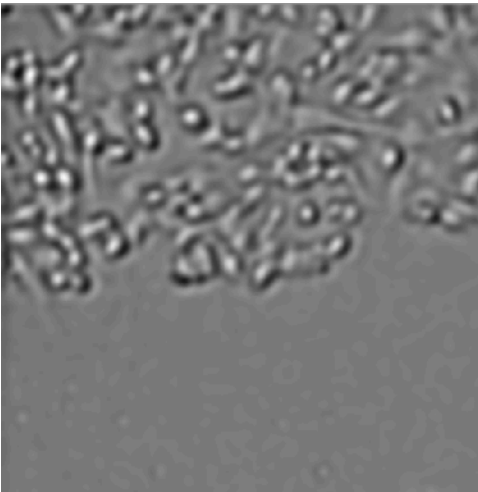A playground of new algorithms to accentuate various types of image texture, making Recipes even more powerful.
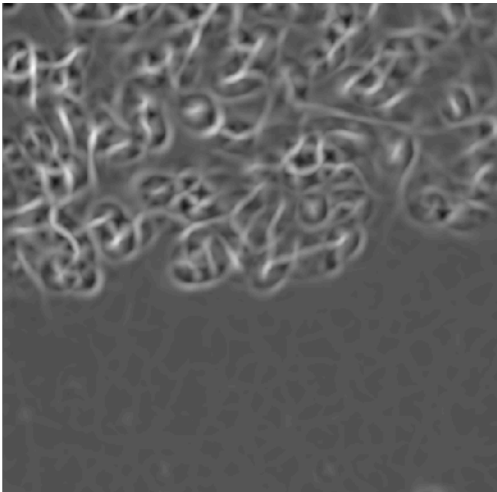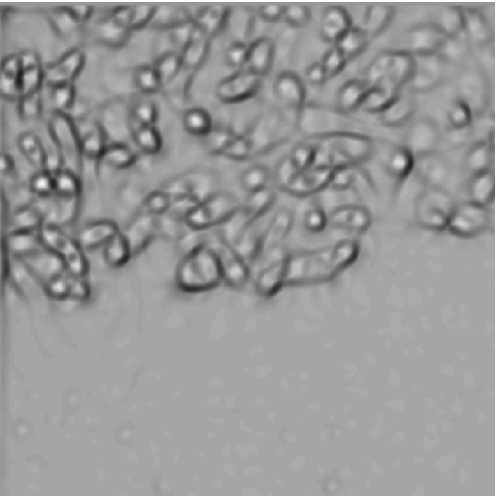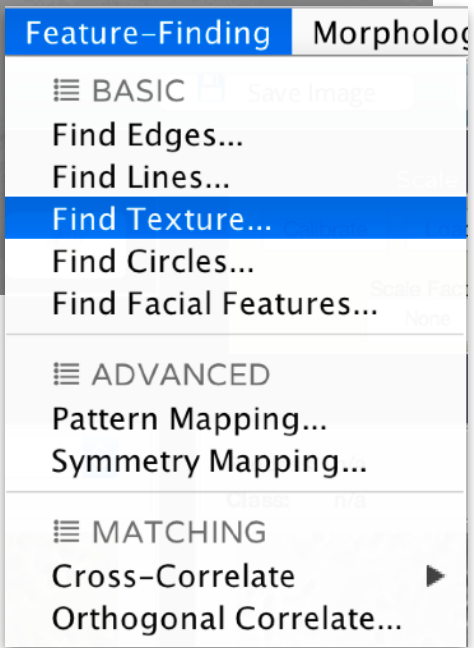
Original Image

Module
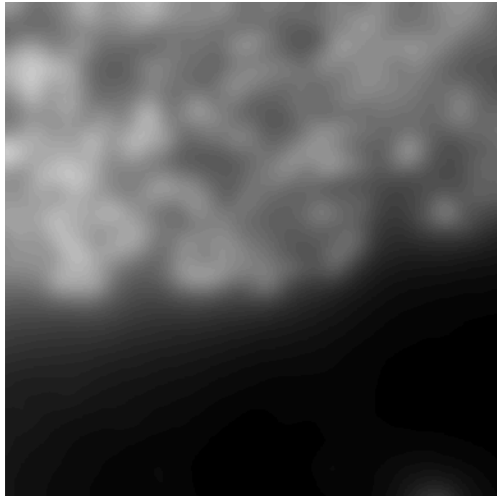

Trace

First Eigen

Second Eigen
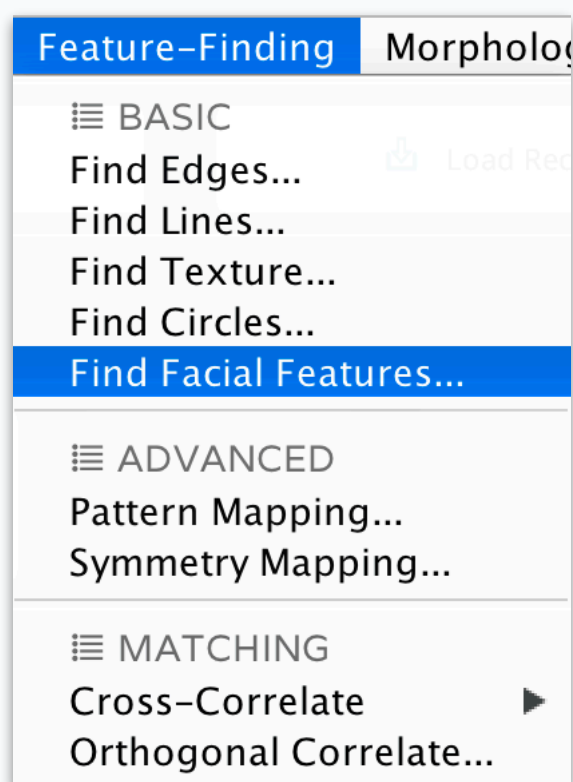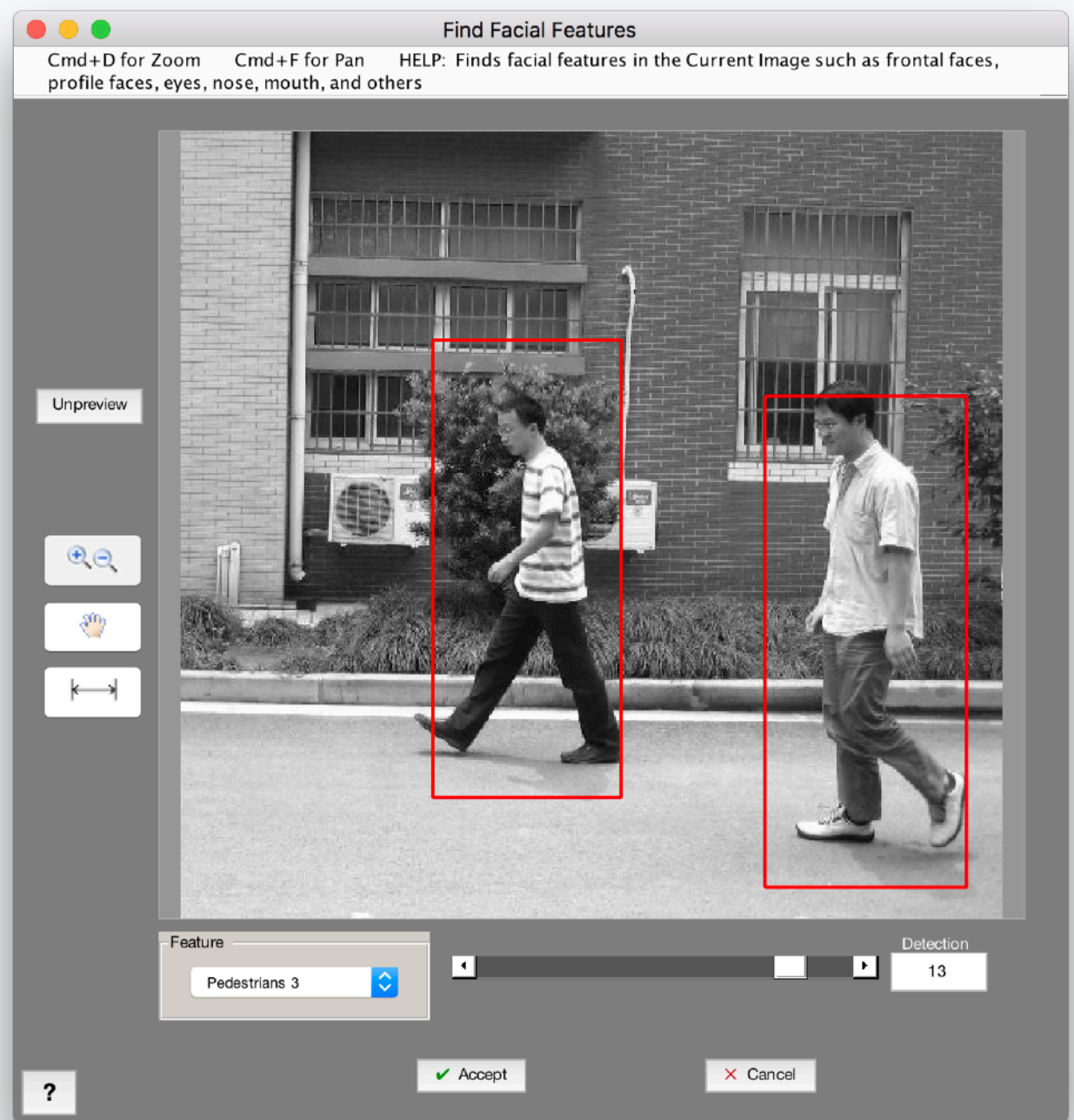

Square Eigen Diff

Gabor

New Function: Pedestrian Detection

MIPAR keeps expanding!

The *Find Faces* function has been outfit with multiple pedestrian detection algorithms.

Bug Fixes

- Bug which caused MIPAR to crash during some freehand and pen tracing has been fixed
- Over 50 other fixes and improvements

Other Notable Changes

- *Color Cluster* will now consistently label the same classes in the same order across images
- *Find Lines* edge artifacts have been removed
- *Top-Hat* and *Bottom-Hat* Filters have been renamed to *Bright Texture* and *Dark Texture*, respectively
- Several windows will no longer prompt to confirm cancellation if no edits have been made
- Section grid size for parallel CPU operations has been added to Preferences
- You may now press "Enter" to calculate Scale Factor in the Calibration Window
- Recipe Chapter names will now print during Recipe loading instead of each step name