

Analyze Training Workshop Agenda

April 27-30, 2010

<p><u>Tuesday</u></p>	<p>Welcome / Introduction Overview of Analyze Image Data Representation, Access and Management 2-D Image Generation and Display 3-D Image Generation and Display</p> <ul style="list-style-type: none"> - Volume Rendering – Algorithms, Controls, Object Maps, Tools - Virtual Endoscopy - Cine Movie Loop Display
<p><u>Wednesday</u></p>	<p>3-D Image Generation and Display</p> <ul style="list-style-type: none"> - Surface Modeling – Surface Extraction and Viewing <p>Image Processing</p> <ul style="list-style-type: none"> - Image Manipulation / Linear Transformation - Histogram Transformations - Spatial Domain Filtering - Fourier Domain Filtering / Deconvolution <p>Image Segmentation</p> <ul style="list-style-type: none"> - Manual and Semi-automated Image Editing - Morphologic Segmentation - Watershed Segmentation - Multispectral Classification
<p><u>Thursday</u></p>	<p>Multimodality Image Fusion – 2-D and 3-D Registration Image Mensuration</p> <ul style="list-style-type: none"> - Line Profiles – 1-D Measurements - Regions Of Interest – 2-D and 3-D Measurements - Stereologic-based Measures - Automated Object Counting and Measurement - Measurement of Tree-like Structures (Vessels)
<p><u>Friday</u></p>	<p>Specialized Application Solutions</p> <ul style="list-style-type: none"> - SISCOM - Mayo 3D Brain Atlas - Diffusion Tensor Imaging (DTI) - T2 Projection - Volume Metrics <p>Analyze ITK Modules Analyze Workshop Wrap-up</p>

Tuesday, April 27th –

7:30 AM	Registration / Information Desk
8:00 AM	<p>Welcome</p> <ul style="list-style-type: none"> - Director, Biomedical Imaging Resource <p>Introduction</p> <ul style="list-style-type: none"> - Mayo Biomedical Imaging Resource Staff - Training Schedule <p>Overview of Analyze</p> <ul style="list-style-type: none"> - The Analyze Software System <p>Image Data Representation, Access, and Management</p> <ul style="list-style-type: none"> - Coordinate Systems / Anatomical Orientation / Image File Formats - Load - DICOM Tool - Import / Export <p style="text-align: center;">--Break--</p> <p>Image Data Representation, Access, and Management</p> <ul style="list-style-type: none"> - Load As / Save / Save As - Analyze Workspace Management / Resources / Drag and Drop <p>2-D Image Generation and Display</p> <ul style="list-style-type: none"> - Multiplanar Sections - Oblique Sections - Volume Compare <p style="text-align: center;">--Lunch--</p> <p>3-D Image Generation and Display</p> <ul style="list-style-type: none"> - Volume Render <ul style="list-style-type: none"> - Volume Rendering – Algorithms / Controls - Volume Rendering – Display / Manipulate / Measurement Tools <p style="text-align: center;">--Break--</p> <ul style="list-style-type: none"> - Volume Rendering – Building Object Maps / Sequences / Tools - Virtual Endoscopy - Cine Movie Loop Display <ul style="list-style-type: none"> - Movie
4:30 PM	Finish
4:30 – 6:30 PM	'Hands-On' Session

Wednesday, April 28th –

<p>8:00 AM</p>	<p>3-D Image Generation and Display</p> <ul style="list-style-type: none"> - Surface Modeling – Surface Extraction and Viewing - Surface Extractor / Surface Render <p>Image Processing</p> <ul style="list-style-type: none"> - Image Manipulation / Linear Transformation <ul style="list-style-type: none"> - Image Calculator / Image Algebra - Histogram Transformations <ul style="list-style-type: none"> - Histogram Ops <p style="text-align: right;">--Break--</p> <p>Spatial Domain Filtering</p> <ul style="list-style-type: none"> - Spatial Filters <p>Fourier Domain Filtering / Deconvolution</p> <ul style="list-style-type: none"> - Filter Designer / 3DFFT <p style="text-align: right;">--Lunch--</p> <p>Image Segmentation</p> <ul style="list-style-type: none"> - Manual and Semi-automated Image Editing <ul style="list-style-type: none"> - Image Edit - Morphologic Segmentation <ul style="list-style-type: none"> - Morphology / Object Extractor <p style="text-align: right;">--Break--</p> <p>Watershed Segmentation</p> <ul style="list-style-type: none"> - Watershed <p>Multispectral Feature Classification</p> <ul style="list-style-type: none"> - Multispectral Classification
<p>4:30 PM</p>	<p>Finish</p>
<p>4:30 – 6:30 PM</p>	<p>'Hands-On' Session</p>

Thursday, April 29th –

<p>8:00 AM</p>	<p>Multimodality Image Fusion - 2-D and 3-D Registration</p> <ul style="list-style-type: none"> - Registration Algorithms - 3-D Rigid Registration: Voxel Matching / Surface Matching - Point-to-Surface Registration - 2-D Rigid Registration: Voxel Matching / Surface Matching - Nonrigid Registration: 2-D / 3-D <p style="text-align: center;">--Break--</p> <p>Image Mensuration</p> <ul style="list-style-type: none"> - Line Profiles - 1-D Measurements <ul style="list-style-type: none"> - Line Profile - Regions Of Interest - 2-D / 3-D Measurements <ul style="list-style-type: none"> - ROI <ul style="list-style-type: none"> o Region Types / Object Maps o 2D / 3D Region Definition o 2D / 3D Region Sampling <p style="text-align: center;">--Lunch--</p> <ul style="list-style-type: none"> o Output Stats / Logging o Sampling Sequences o Histograms o Tools: Threshold / Ortho Review / Propagate Regions <ul style="list-style-type: none"> - Stereologic-based Measures <ul style="list-style-type: none"> - Stereology <p style="text-align: center;">--Break--</p> <ul style="list-style-type: none"> - Automated Object Counting and Measurement <ul style="list-style-type: none"> - Object Counter - Measurement of Tree-like Structures (Vessels) <ul style="list-style-type: none"> - Tree Analysis
<p>4:30 PM</p>	<p>Finish</p>
<p>4:30 – 6:30 PM</p>	<p>‘Hands-On’ Session</p>

Friday, April 30th –

8:00 AM	Special Application Solutions <ul style="list-style-type: none">- SISCOM- Mayo 3D Brain Atlas <p style="text-align: right;">--Break--</p> Special Application Solutions <ul style="list-style-type: none">- Diffusion Tensor Imaging (DTI)- T2 Projection- Volume Metrics Analyze ITK Modules <ul style="list-style-type: none">- ITK Filter- ITK Segment 2D/3D- ITK Registration
12:00 PM	Analyze Training Workshop Wrap-Up