



3DSlicer  
Version 4.0



# **The 3DSlicer open-source platform for segmentation, registration, quantitative imaging and 3D visualization of biomedical image data**

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Brigham and Women's Hospital, Harvard Medical School

Director of Training,  
National Alliance for Medical Image Computing (NA-MIC)  
Neuroimage Analysis Center (NAC)



# 3D Slicer

A multi-platform, **free and open source** software package for **visualization** and **medical image computing**

[Download](#)[Tutorial](#)[Feedback](#)[Documentation](#)

## Slicer Wiki

### About Slicer

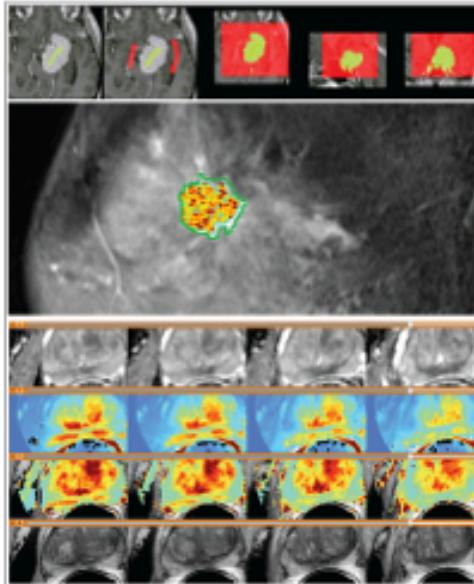
- ▶ Introduction
- ▶ Acknowledgments
- ▶ Contact Us

### Resources

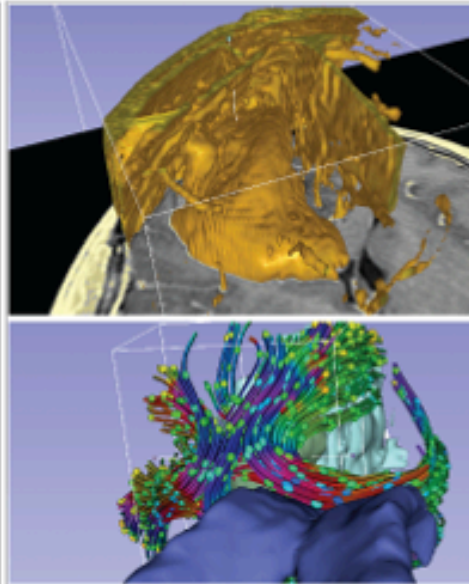
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- ▶ Commercial Use
- ▶ NCIA
- ▶ Publication DB
- ▶ Image Gallery
- ▶ Slicer Community
- ▶ Source Code
- ▶ Licensing
- ▶ Mailing Lists
- ▶ Web Archive

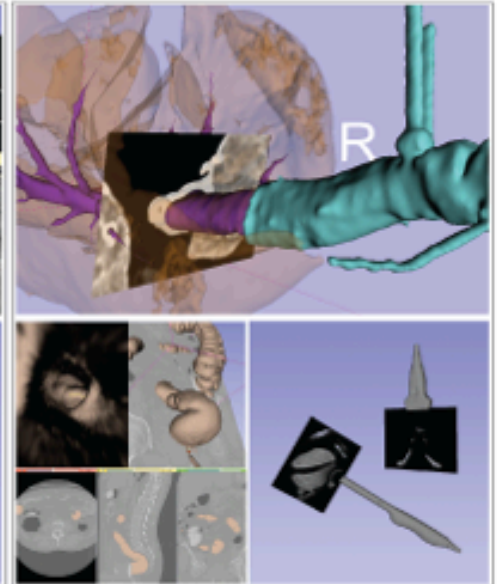
### Powerful processing.



### Streamlined interface.



### Extensible platform.



# 3D Slicer

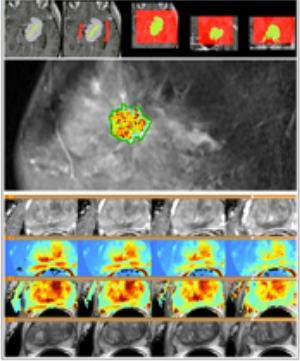
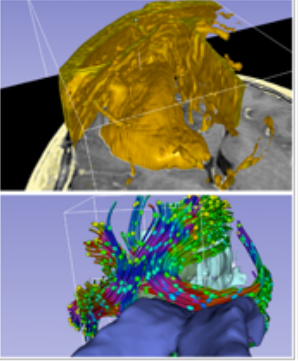
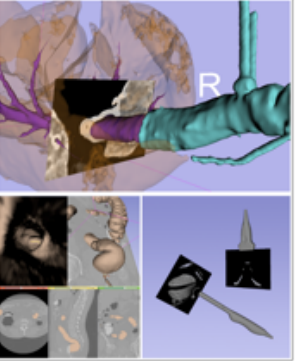

*version 4*[www.slicer.org](http://www.slicer.org)

The community of Slicer developers is proud to announce the release of Slicer 4.1. Find out more...



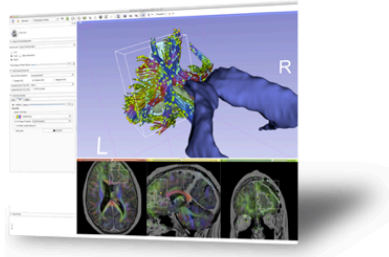
# 3DSlicer

- Slicer is a **freely available open-source** application for viewing, analyzing and interacting with biomedical imaging data

Powerful processing.	Streamlined interface.	Extensible platform.
		
 <b>3D Slicer</b> <small>version 4.0</small>		<a href="http://www.slicer.org">www.slicer.org</a>



# 3DSlicer



## Get Slicer 4.

Slicer 4 is the latest stable version of 3D Slicer, a free, comprehensive software platform for medical image analysis and visualization developed with NIH support.

3D Slicer is distributed under a permissive BSD-style open source license. It has a thriving user and developer community.

### Pre-compiled binaries

	Windows	Mac OS X	Linux
stable release	64 bit 4.1.0 64 bit installer 2012-04-11 r19886 (159.6MB)	4.1.0 64 bit installer 2012-04-11 r19886 (236.9MB)	4.1.0 64 bit archive 2012-04-11 r19886 (251.5MB)
	32 bit 4.1.0 32 bit installer 2012-04-11 r19886 (153.3MB)		
nightly build	64 bit nightly 64 bit installer 2012-04-29 r19953 (160.4MB)	nightly 64 bit installer 2012-04-27 r19951 (237.4MB)	nightly 64 bit archive 2012-04-29 r19953 (252.0MB)
	32 bit nightly 32 bit installer 2012-04-29 r19953 (154.0MB)		

### System requirements

Slicer requires 1GB of RAM absolute minimum, with more highly recommended. Common data sets may require 4GB or more RAM for processing. A fast graphics card or GPU that supports OpenGL is also recommended.

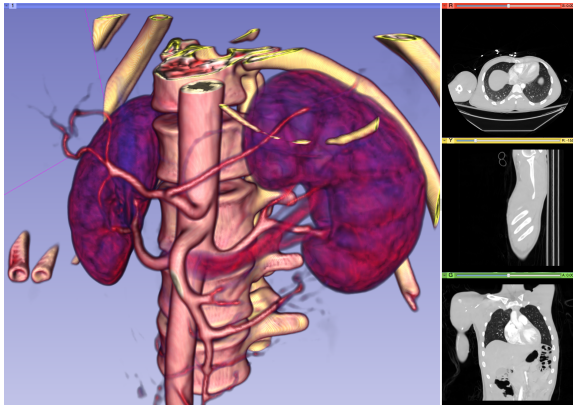
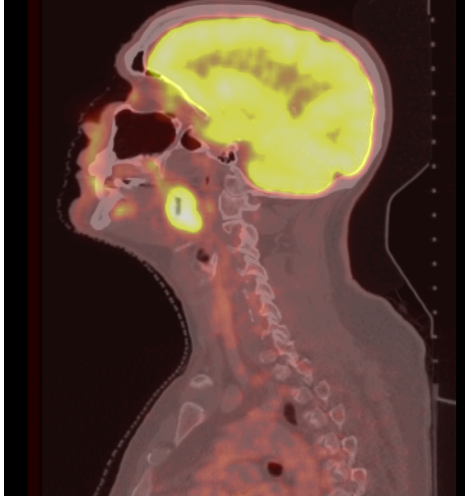
Slicer is built and tested on many hardware and software platforms. 3D Slicer runs on Microsoft Windows XP, Vista, and Windows 7; Mac OS X versions 10.5 (Leopard), 10.6 (Snow Leopard), and 10.7 (Lion); and a variety of Linux distributions.

- Slicer is a **freely available open-source** application for viewing, analyzing and interacting with biomedical imaging data

- Slicer is a **multi-platform** software on Windows, Linux, and Mac



# 3DSlicer



- Slicer is a **freely available open-source** application for viewing, analyzing and interacting with biomedical imaging data
- Slicer is a **multi-platform** software on Windows, Linux, and Mac
- Slicer is a **multi-institutional effort** mainly supported by the National Institute of Health



# Slicer 16<sup>th</sup> year Anniversary

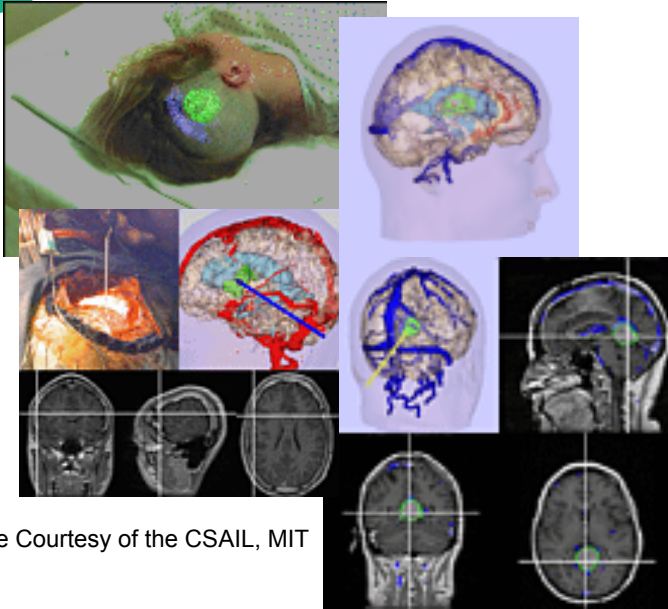


Image Courtesy of the CSAIL, MIT

- 1997: Slicer started as a Master's thesis between the Surgical Planning Lab (Harvard) and the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT

- 2013: International open-source platform developed through a multi-institution effort

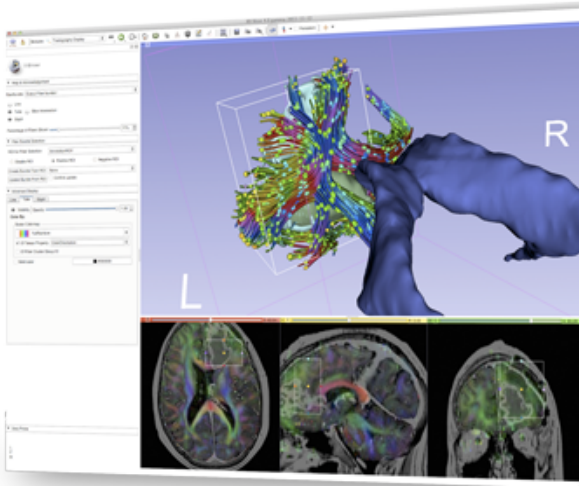
P.I. Prof. Ron Kikinis, BWH, Harvard

Powerful processing.	Streamlined interface.	Extensible platform.
	<b>3D Slicer</b> version 4	<a href="http://www.slicer.org">www.slicer.org</a>



# Slicer License

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- Slicer is distributed under a BSD-style license agreement with no restriction on use
- Slicer is not FDA-approved nor CE-marked
- 3D Slicer bridges the “valley of death” for subject specific analysis

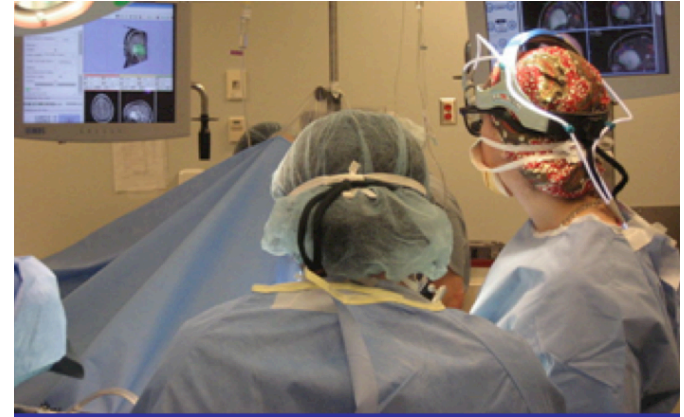


# An interdisciplinary platform

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An **open-source environment**  
for software developers



An **end-user application**  
for clinical investigators  
and scientists

A software platform that is both **easy to use** for clinical researchers and **easy to extend** for programmers





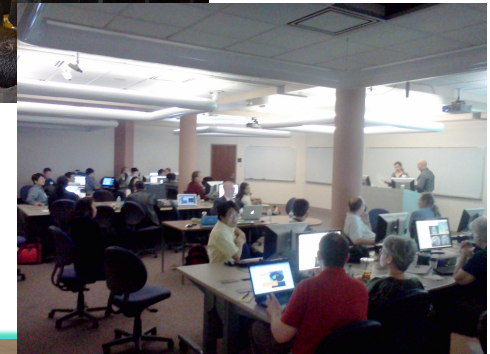
# Slicer Is Open

- Open Science  
= Open Source  
+ Open Data  
+ Open Community

Madrid 2012



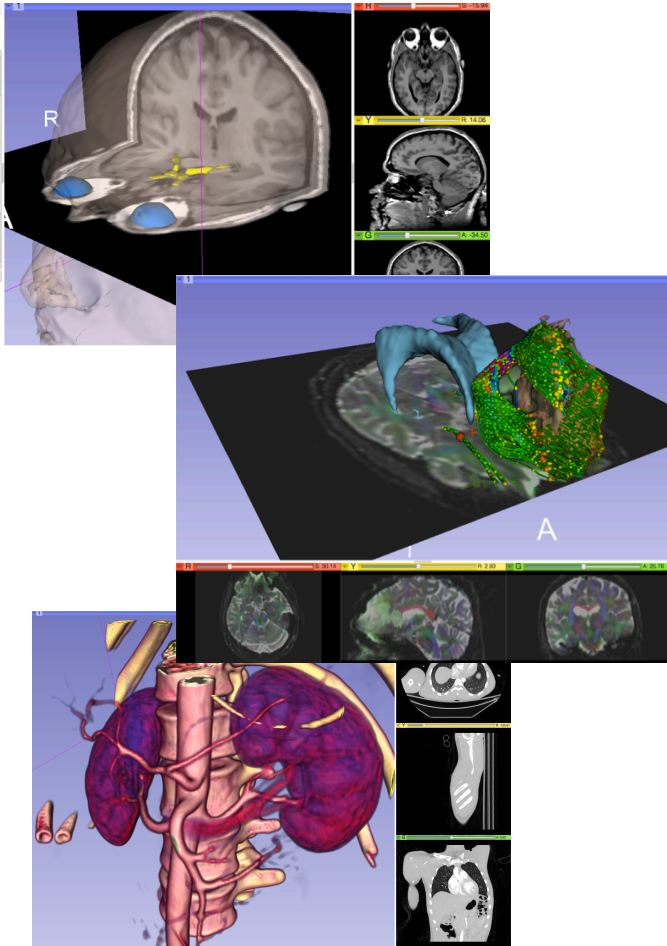
Iowa City, USA 2012



Courtesy R. Kikinis



# Slicer Open Community



- 80 authorized developers contributing to the source code
- >700 subscribers on user and developer mailing list
- > 55,000 downloads of Slicer4 since November 2011



# Nov.2011-March.2013 Download



## Slicer 4 download statistics

Total matching downloads:  
**55302**

Download location **By Country** By Filename By Month

Date range:

forever

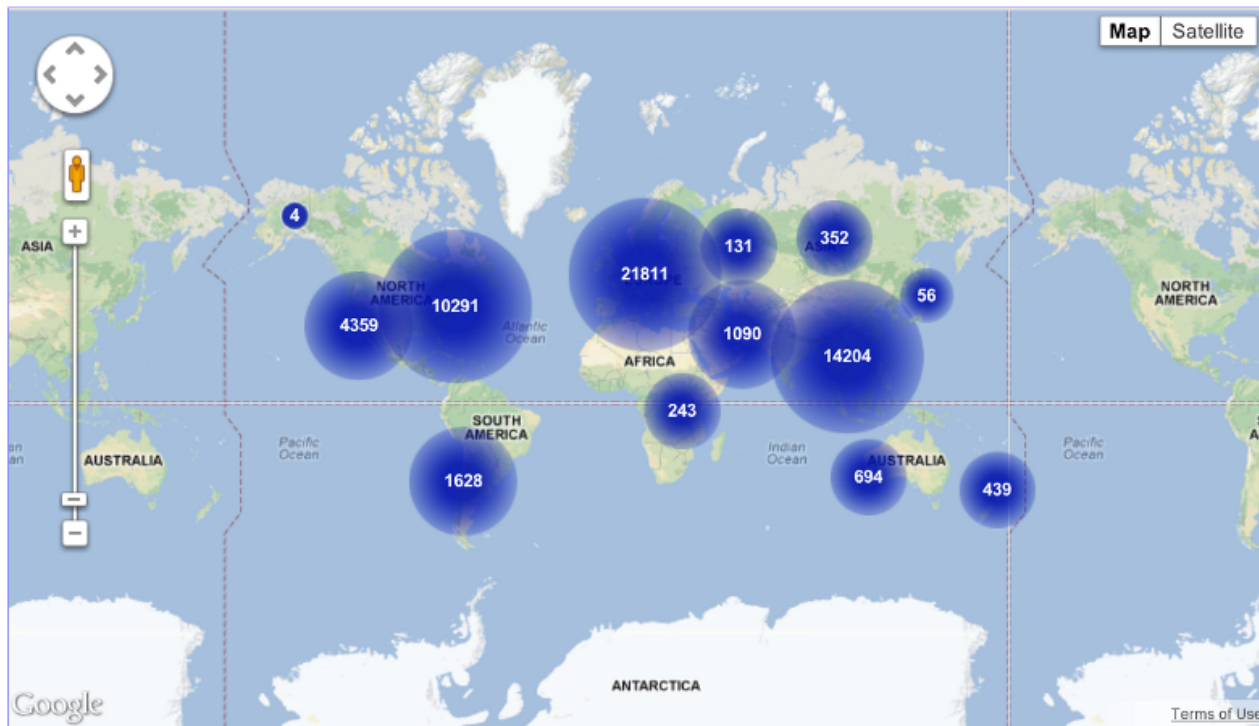
Release type:

any

Browser type:

desktop

Update







# Bridging the gap to accelerate translational research



$$\frac{\partial}{\partial x_i} \frac{\partial}{\partial x_k} A$$

$$\frac{\partial}{\partial x_k} \left( -\nabla^2 A_k + \frac{1}{c^2} \frac{\partial^2 A_k}{\partial t^2} + \frac{\partial}{\partial x_k} \left( \vec{\nabla} \cdot \vec{A} + \frac{1}{c} \frac{\partial \phi}{\partial t} \right) \right) = \frac{4\pi}{c} J_k$$

$$-\nabla^2 \vec{A} + \frac{1}{c^2} \frac{\partial^2 \vec{A}}{\partial t^2} + \vec{\nabla} \left( \vec{\nabla} \cdot \vec{A} + \frac{1}{c} \frac{\partial \phi}{\partial t} \right) = \frac{4\pi}{c} \vec{J}$$

```

// set up the database
if (argc > 1)
{
  QString directory(QString(Q3));
  settings.setValue("databaseDirectory", directory);
  settings.sync();
}
else
{
  settings.setValue("databaseDirectory", "");
}
databaseDirectory = settings.value("databaseDirectory").toString();
if (!databaseDirectory.isEmpty())
  QDir::current().cd(databaseDirectory);
else
  databaseDirectory = settings.value("databaseDirectory").toString();
}

```

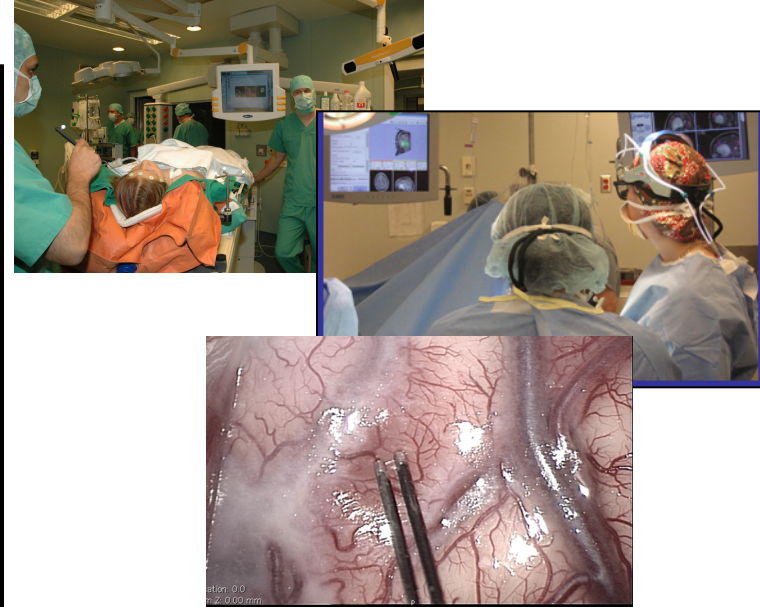


Image courtesy of Arya Nabavi, MD

Algorithm Development

Problem solving

Bridging the communication gap requires a collaborative environment that fosters exchange of specialized knowledge and expertise between clinical researchers and scientists.



# Slicer is 16 year old

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- Every 4-5 year: Slicer versions: Major architectural, functional and GUI redesign
- Every 6 month: Within each version, updated release
- Every day!: Binary installation packages to access bleeding-edge functionality



# Slicer is built every night

Slicer4										
Dashboard    Calendar    Previous    Current    Project										
WARNING: This CDash instance is running the bleeding edge svn trunk CDash code, and is updated frequently. You have been warned.										
2 files changed by 1 author as of Friday, April 27 2012 - 23:00 EDT										
Show Filters    Advanced View    Auto-refresh    Help										
Nightly-Packages										
Site	Build Name	Update	Configure			Build		Test		Build Time
		Files	Error	Warn	Error	Warn	Not Run	Fail	Pass	
factory-win7.kitware	Windows7-VS2008-64bits-QT4.7.4-PythonQt-With-Tcl-CLI-Release	2	0	0	0	391 <sup>1199</sup> <sub>198</sub>	0	0	556	3 hours ago
factory-win7.kitware	Windows7-VS2008-32bits-QT4.7.4-PythonQt-With-Tcl-CLI-Release	2	0	0	0	289 <sup>124</sup> <sub>24</sub>	0	0	556	5 hours ago
factory-ubuntu-64bits.kitware	Linux-g++4.4.3-64bits-QT4.7.4-PythonQt-With-Tcl-CLI-Release	2	0	0	0	18 <sup>12</sup> <sub>2</sub>	0	0 <sub>2</sub>	558 <sup>12</sup>	6 hours ago
factory-mac-64bits.kitware	SnowLeopard-g++4.2.1-64bits-QT4.7.4-PythonQt-With-Tcl-CLI-Release	2	0	0	0	18 <sup>12</sup> <sub>2</sub>	0	0	558	5 hours ago
Nightly										
Site	Build Name	Update	Configure			Build		Test		Build Time
		Files	Error	Warn	Error	Warn	Not Run	Fail	Pass	
District9.kitware	Windows-VS2008-QT4.7.4-PythonQt-With-Tcl-CLI-Release	0	0	0	0	291 <sup>1190</sup> <sub>190</sub>	0	0	555	6 hours ago
factory-ubuntu-64bits.kitware	Linux-g++4.4.3-64bits-QT4.7.4-PythonQt-With-Tcl-NoCLI-Coverage-Release	0	0	0	0	17 <sup>12</sup> <sub>2</sub>	0	0	356	4 hours ago
Extensions-Nightly										
Site	Build Name	Update	Configure			Build		Test		Build Time
		Files	Error	Warn	Error	Warn	Not Run	Fail	Pass	
factory.kitwarein.com	19951-LoadableExtensionTemplate-g++64bits-Qt4.7-Release		0	0	0	20	0	0	2	3 hours ago
factory.kitwarein.com	19951-SuperBuildLoadableExtensionTemplate-g++64bits-Qt4.7-Release		0	0	0	20	0	0	2	3 hours ago
factory-ubuntu	19951-CLIEExtensionTemplate-g++64bits-Qt4.7-Release		0	0	0	0	0	0	1	5 hours ago
factory.kitwarein.com	19951-CLIEExtensionTemplate-g++64bits-Qt4.7-Release		0	0	0	0	0	0	1	3 hours ago
FACTORY-WIN7	19951-CLIEExtensionTemplate-vs9-32bits-Qt4.7-Release		0	0	0	0	0	0	1	3 hours ago
FACTORY-WIN7	19951-CLIEExtensionTemplate-vs9-64bits-Qt4.7-Release		0	0	0	0	0	0	1	2 hours ago
factory-ubuntu	19951-LoadableExtensionTemplate-g++64bits-Qt4.7-Release		0	0	0	0	0	0	2	5 hours ago
FACTORY-WIN7	19951-LoadableExtensionTemplate-vs9-32bits-Qt4.7-Release		0	0	0	0	0	0	2	3 hours ago

## Slicer is under active development: built every night on every platform




# Slicer Bug Tracker

My View - Mantis

http://www.na-mic.org/Bug/my\_view\_page.php

My View - Mantis



Logged in as: *spujol* (Sonia Pujol - reporter) 2012-04-28 05:35 EDT Project: Slicer4

[Main](#) | [My View](#) | [View Issues](#) | [Report Issue](#) | [Change Log](#) | [Roadmap](#) | [Docs](#) | [My Account](#) | [Logout](#)

Issue #  Jump

### Unassigned [^] (1 - 10 / 29)

- 0001951 Resample Scalar/Vector/DWI module does not accept DWI input  
Command Line Modules (Modules/CLI) - 2012-04-26 15:09
- 0001938 Volume rendering volume received from OpenIGTLink  
Base Code - 2012-04-24 16:53
- 0001930 Scrolling volume slices past the last slice  
Usability - 2012-04-23 19:23
- 0001929 Texts in 3D are hard to see  
Usability - 2012-04-23 15:36
- 0001918 Color scale  
Usability - 2012-04-18 11:58
- 0001915 Effect of matrix bottom row in Transforms module  
Base Code - 2012-04-18 10:12
- 0001910 Problem with fiducial registration  
Command Line Modules (Modules/CLI) - 2012-04-17 03:11
- 0001899 Saving and reopening .nrrd problem  
Usability - 2012-04-12 12:43
- 0001887 scenenew roundtrip problem with LUT and with VR  
MRML - 2012-04-11 22:56
- 0001888 Ensure Capitalization rule is respected all over Slicer  
GUI - 2012-04-10 10:55

### Reported by Me [^] (1 - 10 / 37)

- 0001894 EM Segmenter labelmap opacity  
EMSegmenter - 2012-04-25 20:59
- 0001389 Tract Visibility  
Diffusion - 2012-04-18 10:27
- 0001893 Download of Sample MR head data failed  
Base Code - 2012-04-11 16:33
- 0001845 GUI issue in red slicer viewer mode on Mac  
GUI - 2012-04-11 09:17
- 0001892 Colors Module GUI: LUT label values issue  
Base Code - 2012-04-10 20:29
- 0001873 Saving a scene with a new LUT  
Base Code - 2012-04-10 15:23
- 0001844 Maximum path length - Fiducial seeding  
Diffusion - 2012-04-07 12:23
- 0001867 Restoring a scene view with tract intersection  
Diffusion - 2012-04-07 12:21
- 0001866 Saving Scene: path update issue  
Base Code - 2012-04-06 12:06
- 0001778 Tractography Display module  
Diffusion - 2012-04-06 11:37

### Resolved [^] (1 - 10 / 130)

- 0001204 Centralize revision/version/name of Slicer  
Packaging - 2012-04-26 18:53
- 0001167 Fix warning related to SlicerFunctionGenerateExtensionDescription  
Building (CMake, Superbuild) - 2012-04-26 17:24
- 0001677 SVN download of loadable extension modules does not work  
Base Code - 2012-04-26 16:51
- 0001747 windows build/run issues as of svn 19350  
Building (CMake, Superbuild) - 2012-04-26 16:06
- 0001863 To avoid \_RegisterApplication / \_CGSDefaultConnection error, create a template of launchd file for dashboard  
Building (CMake, Superbuild) - 2012-04-26 12:38
- 0001940 No version in mac bundle  
Packaging - 2012-04-26 10:31
- 0001645 update of the mouse mode toolbar  
GUI - 2012-04-25 16:22
- 0001593 Untoggle "Place a fiducial" on click  
Annotations - 2012-04-25 16:22
- 0001936 make RAS box axis labels visibility camera dependent  
Usability - 2012-04-24 11:35
- 0001923 {{documentation/{{documentation/version}}/module-category}} doesn't support extra newline spacing in XML  
Documentation - 2012-04-23 13:47

### Recently Modified [^] (1 - 10 / 776)

- 0001855 Link errors during CTk build  
Building (CMake, Superbuild) - 2012-04-27 17:03
- 0001868 crash on exit and other issues  
Scripting (Wrapping, Python) - 2012-04-27 17:00
- 0001850 Found PythonLibs: ... get\_filename\_component unknown component optimized  
Building (CMake, Superbuild) - 2012-04-27 16:59
- 0001955 EMSegmenter shows up red in Modules Setting but works fine  
Base Code - 2012-04-27 16:44
- 0001954 drag & drop: option to lock view settings  
GUI - 2012-04-27 10:04
- 0001942 Model to Label Map not working  
Diffusion - 2012-04-27 07:46
- 0001941 Extensions download from SVN repository fails  
Extensions - 2012-04-26 21:52
- 0001952 camera position after loading scene  
GUI - 2012-04-26 20:13
- 0001486 VTK Qt designer plugins are missing  
Packaging - 2012-04-26 19:26
- 0001145 Add Test to make slicer starts  
Base Code - 2012-04-26 19:04





# Interoperability with software package and libraries

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- Open-science and open-community philosophy
- File Format compatibility
- Complementary aspects of different open-source software on specialized functionalities



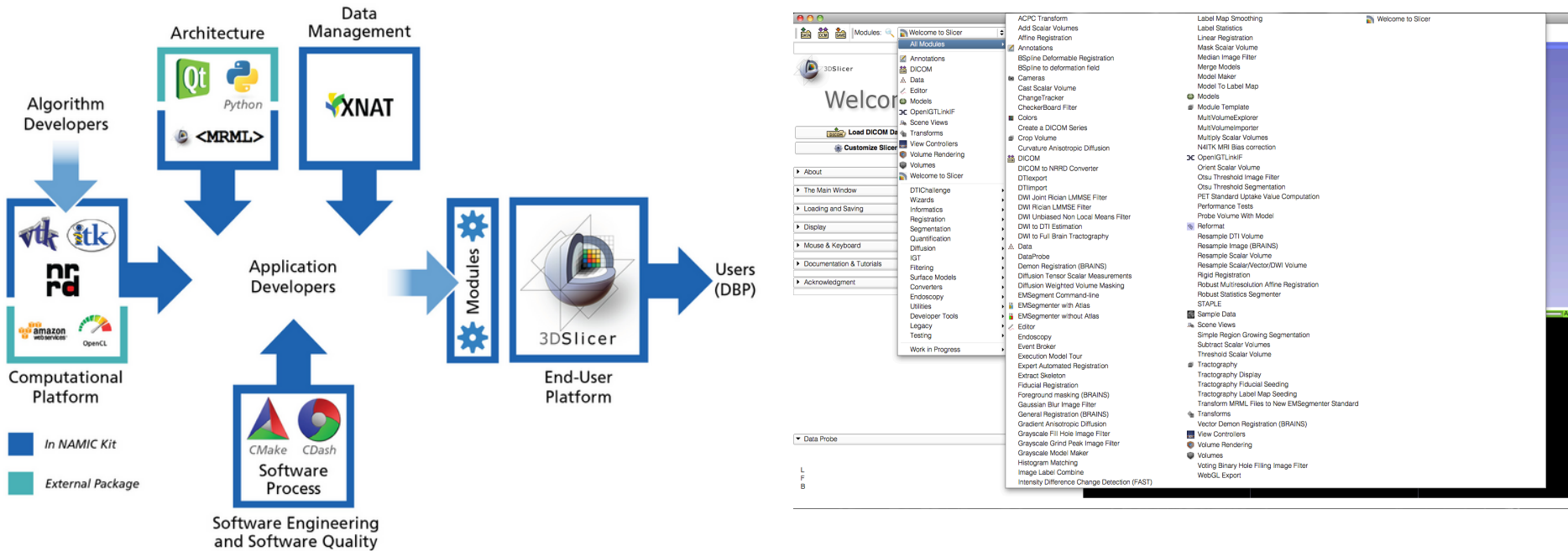
# Slicer Extension Manager

 VolumeResliceDriver Junichi Tokuda (BWH) ★★★★★ (0) <b>INSTALL</b>	 FacetedVisualizer Harini Veeraraghavan ... ★★★★★ (0) <b>INSTALL</b>	 SkullStripper Xiaodong Tao (GE) ★★★★★ (0) <b>INSTALL</b>	 LongitudinalPETCT Paul Mercea (Universit... ★★★★★ (0) <b>INSTALL</b>	 Reporting Andrey Fedorov (SPL), .. ★★★★★ (0) <b>INSTALL</b>	 carma Alan Morris (CARMA), ... ★★★★★ (0) <b>INSTALL</b>	 ABC Marcel Prastawa (Unive... ★★★★★ (0) <b>INSTALL</b>
 PerkNav Tamas Ungi (Queen's U... ★★★★★ (0) <b>INSTALL</b>	 TubeTK Stephen Aylward (Kitw... ★★★★★ (0) <b>INSTALL</b>	 SlicerRT Csaba Pinter (PerkLab... ★★★★★ (0) <b>INSTALL</b>	 DTIPProcess Francois Budin (UNC) ★★★★★ (0) <b>UNINSTALL</b>	 VolumeResliceDriver Junichi Tokuda (BWH) ★★★★★ (0) <b>INSTALL</b>	 FacetedVisualizer Harini Veeraraghavan ... ★★★★★ (0) <b>INSTALL</b>	 SkullStripper Xiaodong Tao (GE) ★★★★★ (0) <b>INSTALL</b>
 LongitudinalPETCT Paul Mercea (Universit... ★★★★★ (0) <b>INSTALL</b>	 Reporting Andrey Fedorov (SPL), .. ★★★★★ (0) <b>INSTALL</b>	 carma Alan Morris (CARMA), ... ★★★★★ (0) <b>INSTALL</b>	 ABC Marcel Prastawa (Unive... ★★★★★ (0) <b>INSTALL</b>	 PerkNav Tamas Ungi (Queen's U... ★★★★★ (0) <b>INSTALL</b>	 TubeTK Stephen Aylward (Kitw... ★★★★★ (0) <b>INSTALL</b>	 SlicerRT Csaba Pinter (PerkLab... ★★★★★ (0) <b>INSTALL</b>

Slicer is Extensible through plugins  
Slicer Extension Catalog offers the possibility to the user to download additional Slicer modules



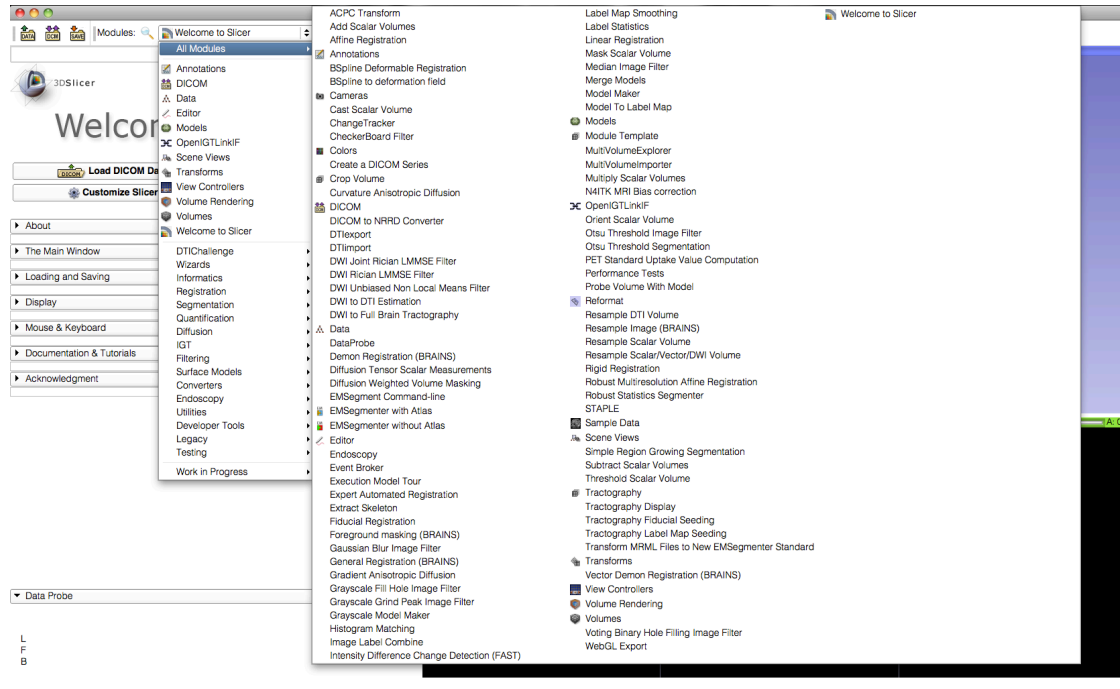
# Core Functionalities



Slicer4 core functionalities include 108 modules, and represent 700,000 lines of code



# Core Functionalities



- Visualization
- Segmentation
- Registration
- Reconstruction
- Diffusion
- Image Guided Therapy
- Quantification
- Reporting



# DICOM module

DICOM Details

LocalDatabase /Users/spujol/tmp/slicerDICOM

Name	Age	Scan	Date	Subject ID	Number	Institution
PET Skull to Mid Thigh Plus DCT Chest W Ini			2012-06-07			
SOFT	CT	3	2012-06-07		1	
HEAD NECK_2D AC	PT	401	2012-06-07		0	
PET SKULL-MID THIGH PL			2012-11-06			
SOFT	CT	3	2012-11-06		1	
HEAD NECK_2D AC	PT	5	2012-11-06		0	

DICOM Data	Reader	Warnings
<input checked="" type="checkbox"/> 3: SOFT	Scalar Volume	
<input checked="" type="checkbox"/> 401: HEAD NECK_2D AC	Scalar Volume	
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced
<input type="checkbox"/> 3: SOFT for contentTime of 1...	Scalar Volume	Images are not equally spaced

Make DICOM Browser Persistent

Uncheck All    Load Selection to Slicer    Close



# DICOM module

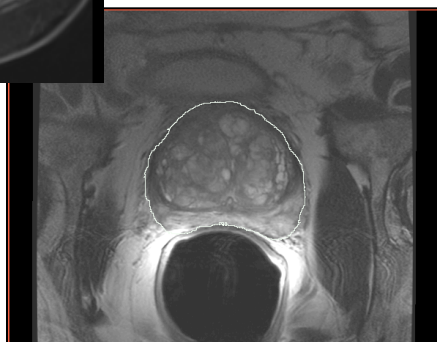
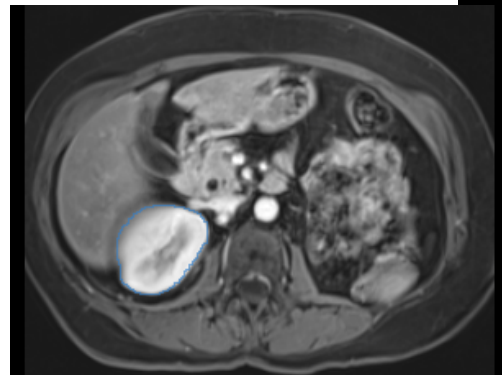
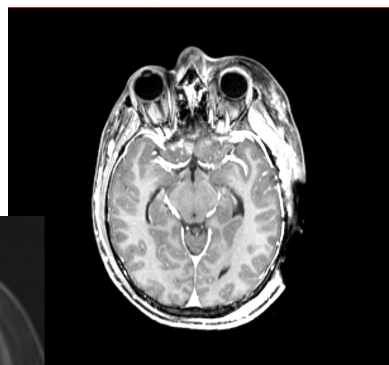
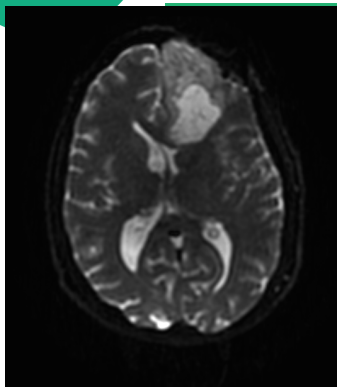
	Name	AETitle	Address	Port	CGET
1	ExampleH...	AETITLE	dicom.exam...	11112	<input type="checkbox"/>
2	MedicalCo...	ANYAE	dicomserver...	11112	<input checked="" type="checkbox"/>
3	common	DOM4CHEE	common.bw...	11112	<input checked="" type="checkbox"/>

- Interface Between DICOM and Slicer

- Core DICOM Parsing in DCMTK/CTK
- Data Pre-Cached in Database
- MRML Manipulation in Slicer Module Logic

- Patient/Study/Series Browser

- Offers Slicer Interpretation of Selected Data
- Multiple Interpretations where DICOM Data is Ambiguous



- Driving Biological Projects leading to the development of new tools
- Applied science oriented toward subject specific analysis in the presence of pathology
- Example: Image-guided therapy



# Slicer use in clinical research environment

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- AMIGO, BWH, Boston, USA (DTI)

- Slicer RT – Canada

(ECR 2013 IMAGINE Session, ‘SlicerRT – 3D Slicer based open-source toolkit for radiation therapy research’. Pinter et al)

- Quantitative Image Network collaboration with German Cancer Research Institute (PET/CT)





# AMIGO, Brigham and Women's Hospital, Boston, MA

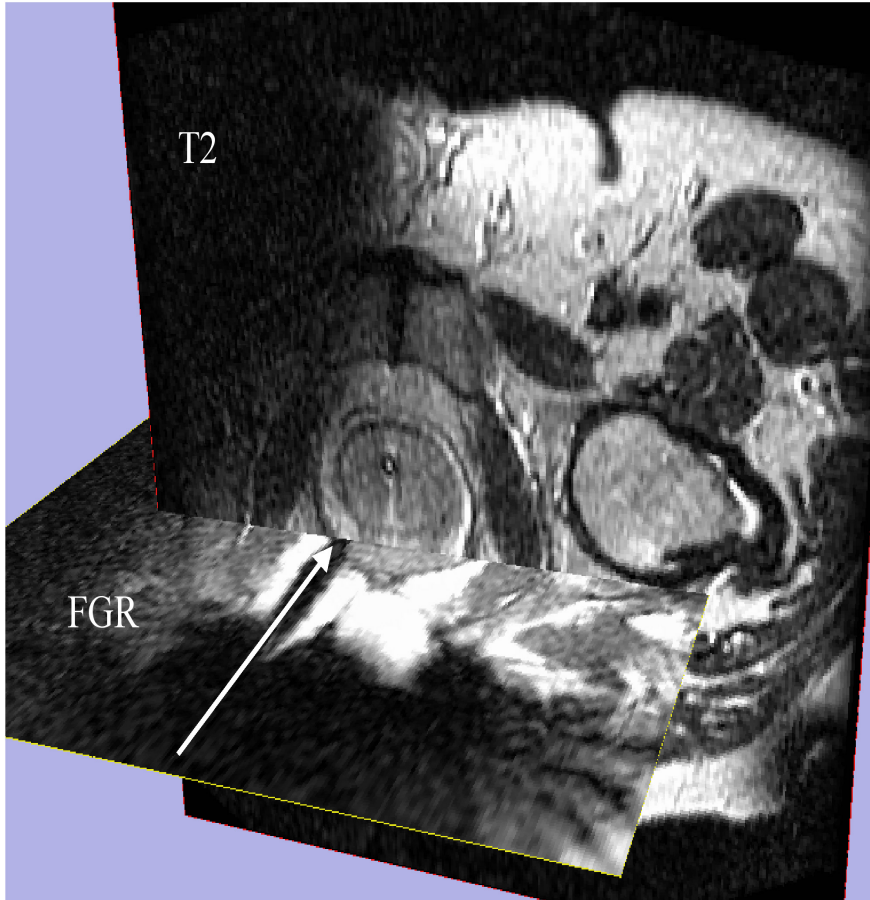
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Improving Patient Care with AMIGO  
Advanced Multimodality Image Guided Operating Suite



# Image-Guided Therapy



- Image-guided therapy for prostate interventions:
- Brachytherapy Planning
  - Navigation for Biopsy

Haker SJ, Mulkern RV, Roebuck JR, Barnes AS, Dimaio S, Hata N, Tempany CM.: Magnetic resonance-guided prostate interventions. *Top Magn Reson Imaging*. 2005 Oct;16(5):355-68.

Image Courtesy of Steven Haker, PhD and Clare Tempany, MD

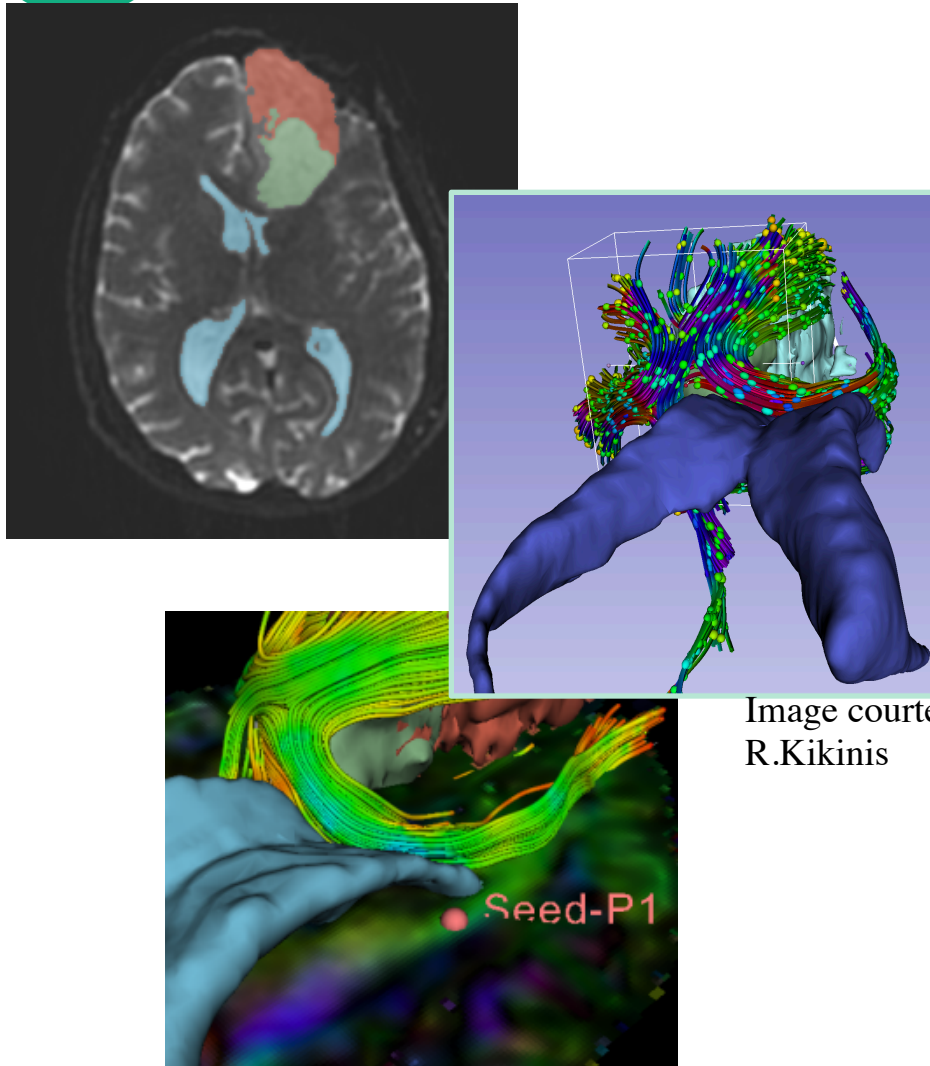
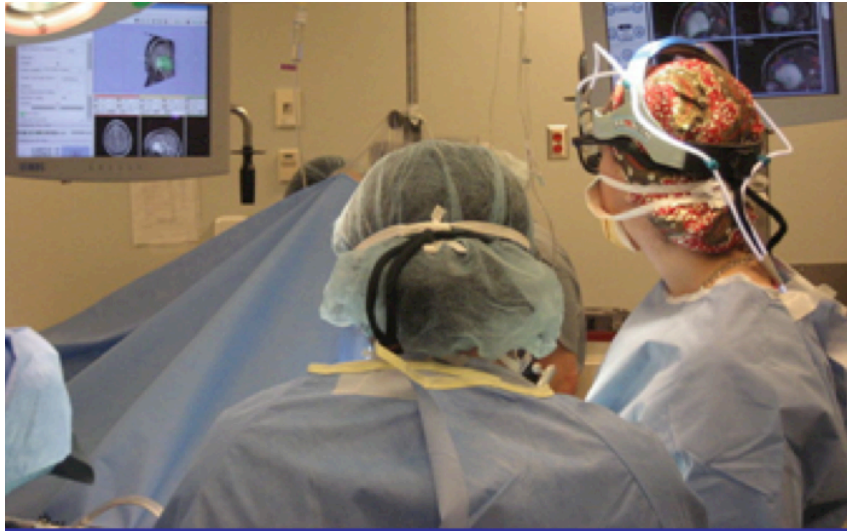


Image courtesy  
R.Kikinis

- Slicer modules used for
- DWI denoising
  - T1/T2/DTI Registration
  - Tumor Segmentation
  - Tractography with Labelmap Seeding
  - Tractography with Fiducial Seeding



# Fiducial Seeding



Seed Selected Fiducials  
Max Number of Seeds 100

Tractography Seeding Parameters

Minimum Path Length 10.00mm

Stopping Criteria Fractional Anisotropy

Stopping Value 0.15

Stopping Track Curvature 0.70

Integration Step Length 0.50mm

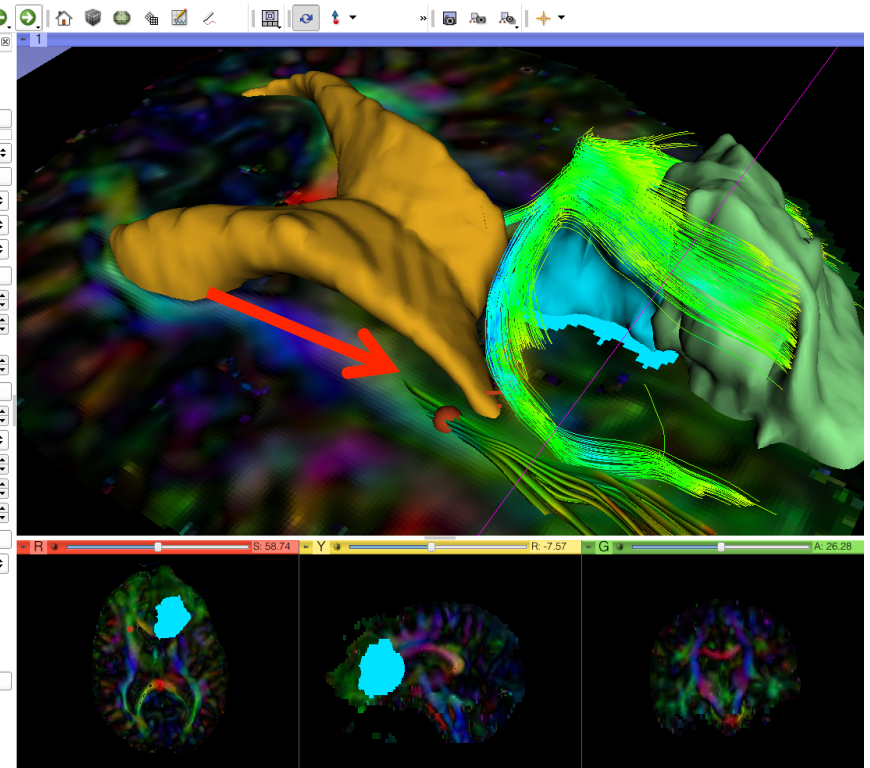
Enabling Options

Create Tracts Initially As Tubes

Enable Seeding Tracts

Data Probe

L  
F  
B



Example of on-the-fly exploration of white matter structures in the contralateral side of the tumor



# Bridging the gap to accelerate translational research



$$\frac{\partial}{\partial x_i} \frac{\partial}{\partial x_k} A$$

$$\frac{\partial}{\partial x_k} \left( \sqrt{A} \nabla^2 A + \frac{1}{c} \frac{\partial^2 A_k}{\partial t^2} + \frac{\partial}{\partial x_k} \left( \vec{\nabla} \cdot \vec{A} + \frac{1}{c} \frac{\partial \phi}{\partial t} \right) \right) = \frac{4\pi}{c} J_k$$

$$-\nabla^2 A_k + \frac{1}{c^2} \frac{\partial^2 A_k}{\partial t^2} + \frac{\partial}{\partial x_k} \left( \vec{\nabla} \cdot \vec{A} + \frac{1}{c} \frac{\partial \phi}{\partial t} \right) = \frac{4\pi}{c} J_k$$

$$-\nabla^2 \vec{A} + \frac{1}{c^2} \frac{\partial^2 \vec{A}}{\partial t^2} + \vec{\nabla} \left( \vec{\nabla} \cdot \vec{A} + \frac{1}{c} \frac{\partial \phi}{\partial t} \right) = \frac{4\pi}{c} \vec{J}$$

```

// set up the database
if (argc > 1)
{
    QString dir(directory(QString::fromStdString(argv[1])));
    settings.setAttribute("databaseDirectory", dir);
    settings.sync();
}

if (! settings.value("databaseDirectory", "").toString().isEmpty())
{
    databaseDirectory = settings.value("databaseDirectory").toString();
    settings.setAttribute("databaseDirectory", databaseDirectory);
    settings.sync();
} else
{
    databaseDirectory = settings.value("databaseDirectory", "").toString();
}
    
```

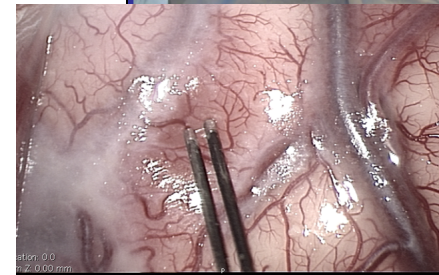
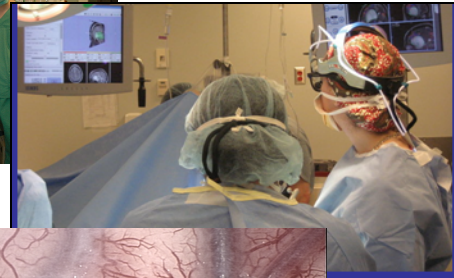
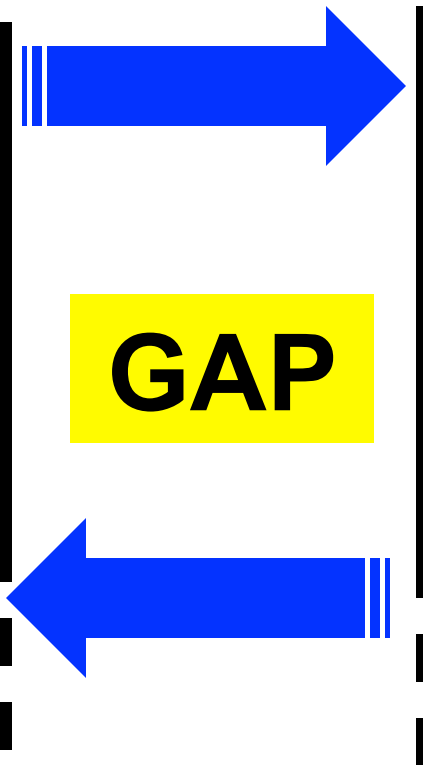


Image courtesy of Arya Nabavi, MD

Problem solving

Algorithm Development



# Slicer Training History: 2005-2013

**Neuroimage Analysis Center**  
"understanding the human brain through imaging"

**NA-MIC Wiki**

**General**  
• Overview  
• Organization  
• Contact Us

**Center Components**  
• Algorithms  
• Engineering  
• Ongoing Biological Projects  
• Collaboration Grants

**Resources**  
• Publication DB  
• Image Gallery  
• Downloads  
• Service  
• Training  
• Dissemination  
• Events  
• Links

**97th Scientific Assembly and Annual Meeting**  
November 27 - December 2, McCormick Place, Chicago.

**Detecting Stable Distributed Patterns of Brain Activation using Gini Contrast** [Read more...](#)

**The National Alliance for Medical Image Computing (NA-MIC) is a multi-institutional, interdisciplinary team of computer scientists, software engineers, and medical investigators who develop computational tools for the analysis and visualization of medical image data. The purpose of the Center is to provide the infrastructure and environment for the development of computational algorithms and open-source technologies, and then oversee the training and dissemination of these tools to the medical research community.**

Supported by the National Institutes of Health, [Roadmap Initiative](#).

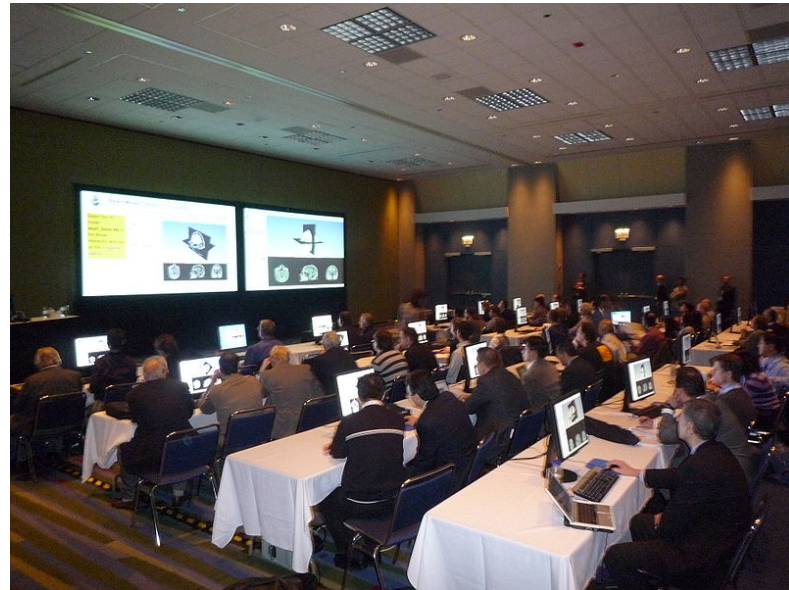
Information about collaborating with NA-MIC is available [on our wiki](#).

- Training Core Component of two major NIH-funded consortia: the National Alliance for Medical Image Computing (NA-MIC) and the Neuroimage Analysis Center (NAC) (P.I. Ron Kikinis)
- Accelerating the translation of new technology into new skills of scientists and clinical investigators



# Slicer Training Workshops

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- 1-2 day hands-on events
- Thematic
  - DTI
  - Image-guided therapy
  - 3D Visualization for radiological applications
  - PETCT SUV Computation
- 15-25 all-level participants



# Slicer Training Events

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SfN, 2009

RSNA, 2009

RSNA, 2010

Hands-on courses at major international conferences

- **RSNA** 2008, 2009, 2010, 2011, 2012, 2013
- **MICCAI** 2008, 2009, 2010, 2011, 2012, 2013
- **SfN** 2009, 2011
- **SPIE** 2012, 2013
- **CAOS** 2010
- **CARS** 2010, 2012, 2013
- etc...





# Slicer Training Events

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Invited workshops at international venues:

- PLA General Hospital, Beijing, China,
- Tokyo Women's Medical University, Japan
- IHK Akademie Westerham, Munich, Germany
- Rey Juan Carlos Universidad, Spain



Tokyo, 2010



Munich, 2008



Beijing, 2010



# Project Weeks

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- Bi-annual week of hands-on programming
- Practical exchange of idea and experience
- 2010: 126 international attendees, 71 projects, 8 countries (Austria, England, France, Germany, Italy, Japan)
- 17 project weeks in the US since 2005





# Conclusion

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- Slicer is an open-source research platform for the rapid development of biomedical image analysis tools.
- Slicer community is open community with contributors from all over the world
- Slicer is a versatile platform for translational research and subject specific analysis of biomedical image data





# Acknowledgments

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National Alliance for Medical Image Computing  
NIH U54EB005149

Neuroimage Analysis Center  
NIH P41RR013218