

# **MICCAI 2015 DTI Challenge: Instructions for accessing the data**

Sonia Pujol, Ph.D.  
Brigham and Women's Hospital  
Harvard Medical School

# DTI Challenge WG

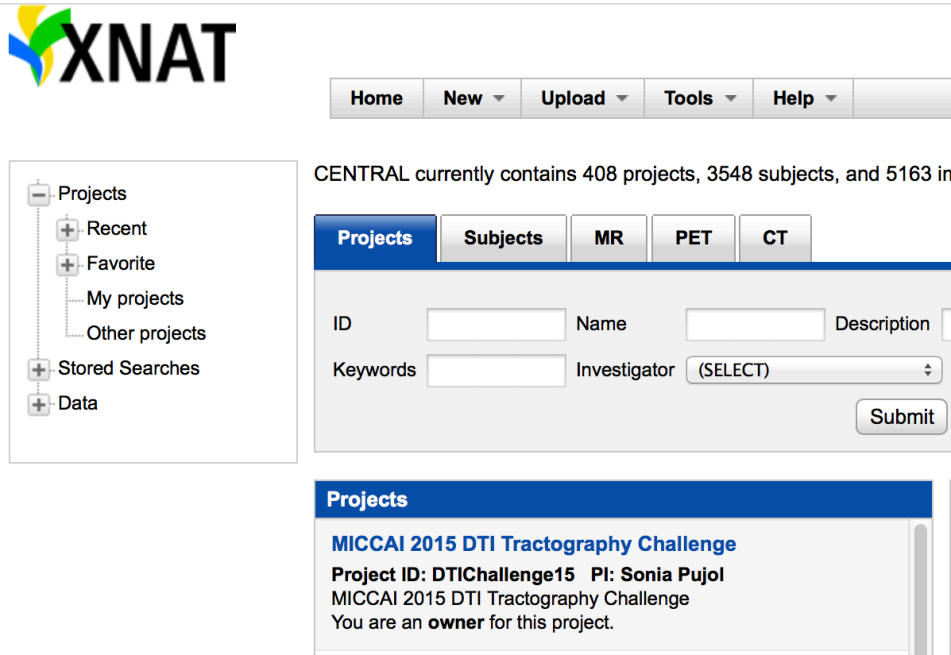
- The DTI Challenge is a working group of clinicians, clinical researchers and computer scientists with a focus on the evaluation of diffusion MRI tractography techniques for neurosurgical decision-making.
- The 2015 DTI Challenge Repository contains the neurosurgical datasets of the 5th edition of the DTI Challenge WG workshop at the MICCAI 2015 conference.

# DTI Challenge Data Repository

The screenshot displays the XNAT Central website interface. At the top left is the XNAT logo. A navigation menu includes 'Home', 'New', 'Upload', 'Tools', and 'Help'. A sidebar on the left lists navigation options: 'Projects' (with sub-items 'Recent', 'Favorite', 'My projects', 'Other projects'), 'Stored Searches', and 'Data'. The main content area shows a summary: 'CENTRAL currently contains 408 projects, 3548 subjects, and 5163 in'. Below this is a tabbed interface with 'Projects', 'Subjects', 'MR', 'PET', and 'CT' tabs. The 'Projects' tab is active, showing a form with fields for 'ID', 'Name', 'Description', 'Keywords', and 'Investigator' (with a dropdown menu), and a 'Submit' button. Below the form, a 'Projects' section lists the 'MICCAI 2015 DTI Tractography Challenge' with details: 'Project ID: DTIChallenge15', 'PI: Sonia Pujol', 'MICCAI 2015 DTI Tractography Challenge', and 'You are an owner for this project.'

The datasets of the DTI Challenge are located in the **‘MICCAI 2015 DTI Tractography Challenge’** repository on the XNAT Central website <http://central.xnat.org>

# DTI Challenge Data Repository

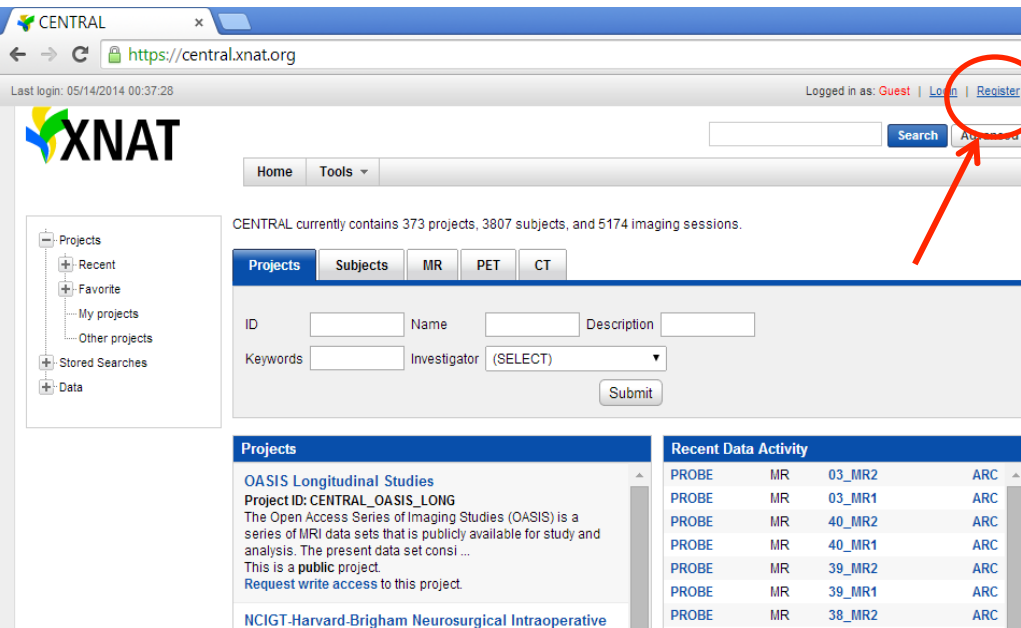


The screenshot displays the XNAT web interface. At the top left is the XNAT logo. A navigation bar contains links for Home, New, Upload, Tools, and Help. Below the navigation bar, a status message reads: "CENTRAL currently contains 408 projects, 3548 subjects, and 5163 in". A sidebar on the left lists navigation options: Projects, Recent, Favorite, My projects, Other projects, Stored Searches, and Data. The main content area features a "Projects" tab and a form with fields for ID, Name, Description, Keywords, and Investigator (with a dropdown menu). A "Submit" button is located at the bottom right of the form. Below the form, a "Projects" section lists a project: "MICCAI 2015 DTI Tractography Challenge" with Project ID: DTIChallenge15, PI: Sonia Pujol, and the text "You are an owner for this project."

This tutorial guides you through the steps of

- 1) creating an account on XNAT Central
- 2) accessing the DTI Challenge directory
- 3) downloading the DTI Challenge datasets

# Step 1: Creating an account on XNAT Central



The screenshot shows the XNAT Central website interface. The browser address bar displays <https://central.xnat.org>. The page header includes the XNAT logo, a search bar, and a navigation menu with 'Home' and 'Tools'. A red circle highlights the 'Register' link in the top right corner, with an arrow pointing to it. The main content area features a search form with fields for ID, Name, Description, Keywords, and Investigator, and a 'Submit' button. Below the search form, there are two sections: 'Projects' and 'Recent Data Activity'. The 'Projects' section lists 'OASIS Longitudinal Studies' and 'NCIGT-Harvard-Brigham Neurosurgical Intraoperative'. The 'Recent Data Activity' section shows a table of data points.

Recent Data Activity				
PROBE	MR	03_MR2		ARC
PROBE	MR	03_MR1		ARC
PROBE	MR	40_MR2		ARC
PROBE	MR	40_MR1		ARC
PROBE	MR	39_MR2		ARC
PROBE	MR	39_MR1		ARC
PROBE	MR	38_MR2		ARC

Go to the XNAT Central main page located at <http://central.xnat.org> and select **Register**

# Step 1: Creating an account on XNAT Central

New User Registration

---

Login Details

Username \*

Password \*

Re-enter password \*

---

First Name \*

Last Name \*

Email \*

Phone

Study Site or Lab

---

Comments Please include a brief description of how you plan to use this site.

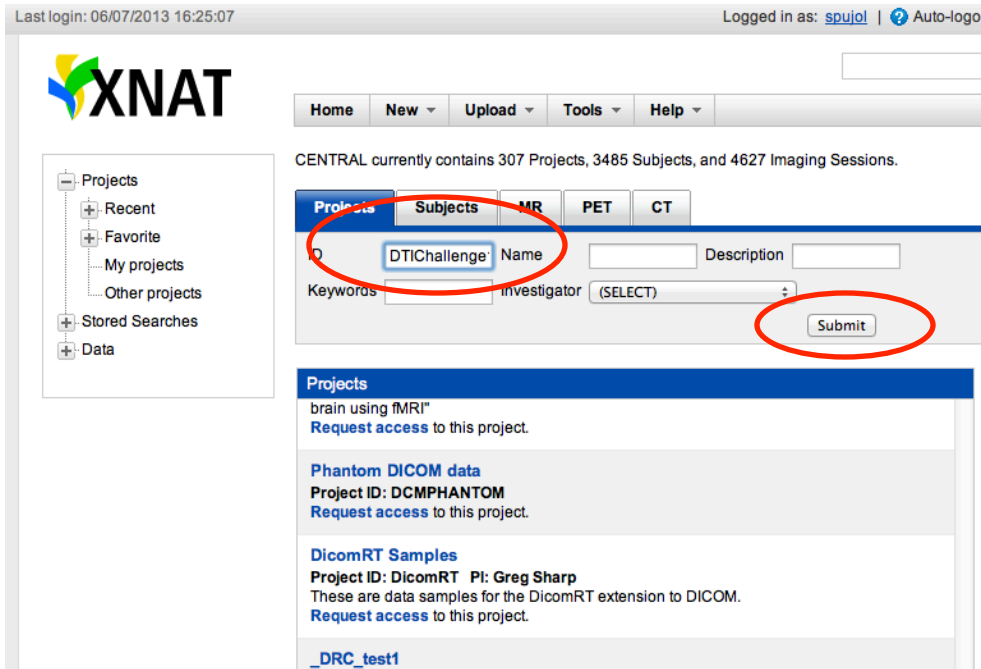
- Fill in the user registration form with your **username**, **password** and **contact Information**.
- In the Comments section, include a brief description of how you plan to use the data. ‘

## Step 2: Requesting Data Access

Once your account is created, please send your **xnat username** to [contact@dti-challenge.org](mailto:contact@dti-challenge.org).

Your name will be added to the list of collaborators with access to the data.

# Step 3: Accessing the Data

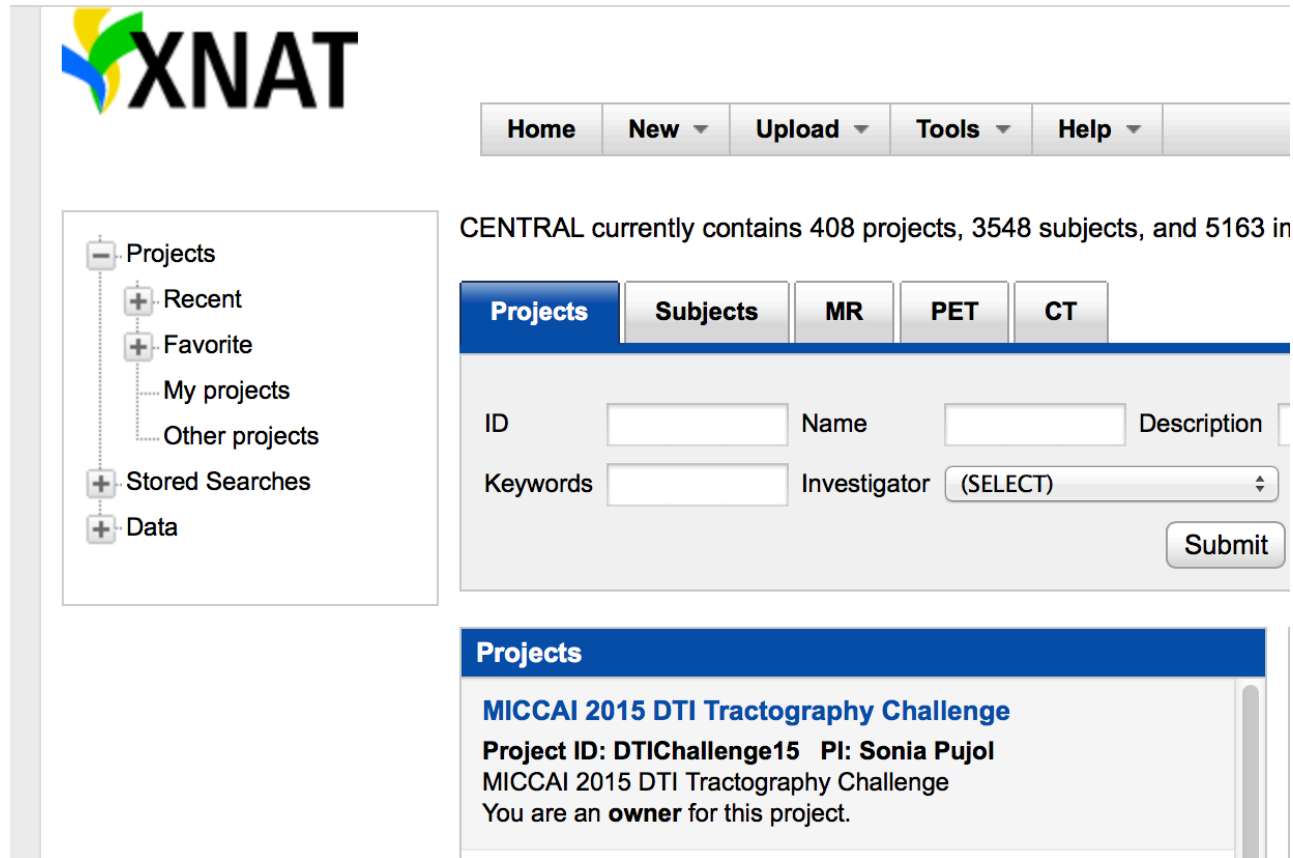


The screenshot shows the XNAT web interface. At the top, it displays 'Last login: 06/07/2013 16:25:07' and 'Logged in as: spuioj | Auto-logout'. The main navigation bar includes 'Home', 'New', 'Upload', 'Tools', and 'Help'. A sidebar on the left lists 'Projects', 'Recent', 'Favorite', 'My projects', 'Other projects', 'Stored Searches', and 'Data'. The main content area shows 'CENTRAL currently contains 307 Projects, 3485 Subjects, and 4627 Imaging Sessions.' Below this, there are tabs for 'Projects', 'Subjects', 'MR', 'PET', and 'CT'. The 'Projects' tab is selected. A form is visible with a 'Name' field containing 'DTIChallenge15', a 'Description' field, a 'Keywords' field, and an 'Investigator' dropdown menu. A 'Submit' button is located at the bottom right of the form. The 'Projects' list below the form includes 'brain using fMRI', 'Phantom DICOM data' (Project ID: DCMPHANTOM), 'DicomRT Samples' (Project ID: DicomRT PI: Greg Sharp), and '\_DRC\_test1'.

After logging in on XNAT Central, select the tab **Projects** and enter the ID **DTIChallenge15**. Click on **Submit** to access the repository.



# Step 3: Accessing the Data



The screenshot displays the XNAT web interface. At the top left is the XNAT logo. A navigation bar contains links for Home, New, Upload, Tools, and Help. A sidebar on the left shows a tree view with categories: Projects (expanded), Recent, Favorite, My projects, Other projects, Stored Searches, and Data. The main content area shows a summary: 'CENTRAL currently contains 408 projects, 3548 subjects, and 5163 in'. Below this is a search form with tabs for Projects, Subjects, MR, PET, and CT. The search form includes fields for ID, Name, Description, Keywords, and Investigator (a dropdown menu), and a Submit button. Below the search form is a 'Projects' section with a blue header. The first project listed is 'MICCAI 2015 DTI Tractography Challenge', with details: Project ID: DTIChallenge15, PI: Sonia Pujol, MICCAI 2015 DTI Tractography Challenge, and 'You are an owner for this project.'

Click on **MICCAI 2015 DTI Tractography Challenge** to access the datasets.

# DTI Tractography Challenge Repository

- The following section shows how to download the data of **Patient1**
- The same procedure will apply for the other cases of the DTI Challenge.

The screenshot displays the XNAT web interface. At the top left is the XNAT logo. A navigation menu includes Home, New, Upload, Tools, and Help. A search bar is located at the top right. The main content area shows the project title "MICCAI 2015 DTI Tractography Challenge" with tabs for Details, Access, Manage, and Pipelines. The Details tab is active, showing the following information:

- ID: DTIChallenge15
- Description: MICCAI 2015 DTI Tractography Challenge
- PI: Pujol, Sonia

Buttons for "Edit Details", "Delete", and "Manage Custom Variabl" are visible. On the right side, there is an "Actions" menu with options like "Add", "Upload In", "View Prea", "Scan Typ", "Add to Fa", and "Downloa".

Below the details, there is a "Subjects" tab with a table of subjects. The table has columns for Subject, WF, Hand, YOB, and MR Sessions. The first row is "Patient1" with a "U" in the WF column. A red circle highlights the "Patient1" entry, and a red arrow points to it from a yellow box containing the text "Click on Patient1".

Subject	WF	Hand	YOB	MR Sessions
Patient1	U		2015	6

# DTI Tractography Challenge Repository

The screenshot shows the XNAT web interface. At the top left is the XNAT logo. A navigation bar contains 'Home', 'New', 'Upload', 'Tools', and 'Help'. A search bar with 'Search' and 'Advanced' buttons is on the top right. A left sidebar lists 'Projects' (Recent, Favorite, My projects, Other projects), 'Stored Searches', and 'Data'. The main content area shows 'PROJECT: DTIChallenge15 > Patient1'. A yellow box with the text 'Select Manage Files' is overlaid on the page. Below this, the 'Subject Details: Patient1' section has two tabs: 'Details' (selected) and 'Projects'. The 'Details' tab shows a list of attributes: Accession # (CENTRAL\_S04252), Date Added (2015-05-01 05:17:44.846 (spujol)), Birth year (2015), Gender (Unknown), Handedness (Unknown), and Group (Patient1). To the right of the details is an 'Actions' menu with options: Edit, View XML, Add Experiment, Download XML, Email, Manage Files (circled in red), and Delete. A red arrow points from the yellow box to the 'Manage Files' option. Below the details is an 'Experiments' section with a table listing experiments.

**XNAT**

Home New Upload Tools Help

PROJECT: DTIChallenge15 > Patient1

## Select Manage Files

**Subject Details: Patient1**

Details Projects

**Accession #** CENTRAL\_S04252  
**Date Added** 2015-05-01 05:17:44.846 (spujol)  
**Birth year** 2015  
**Gender** Unknown  
**Handedness** Unknown  
**Group** Patient1

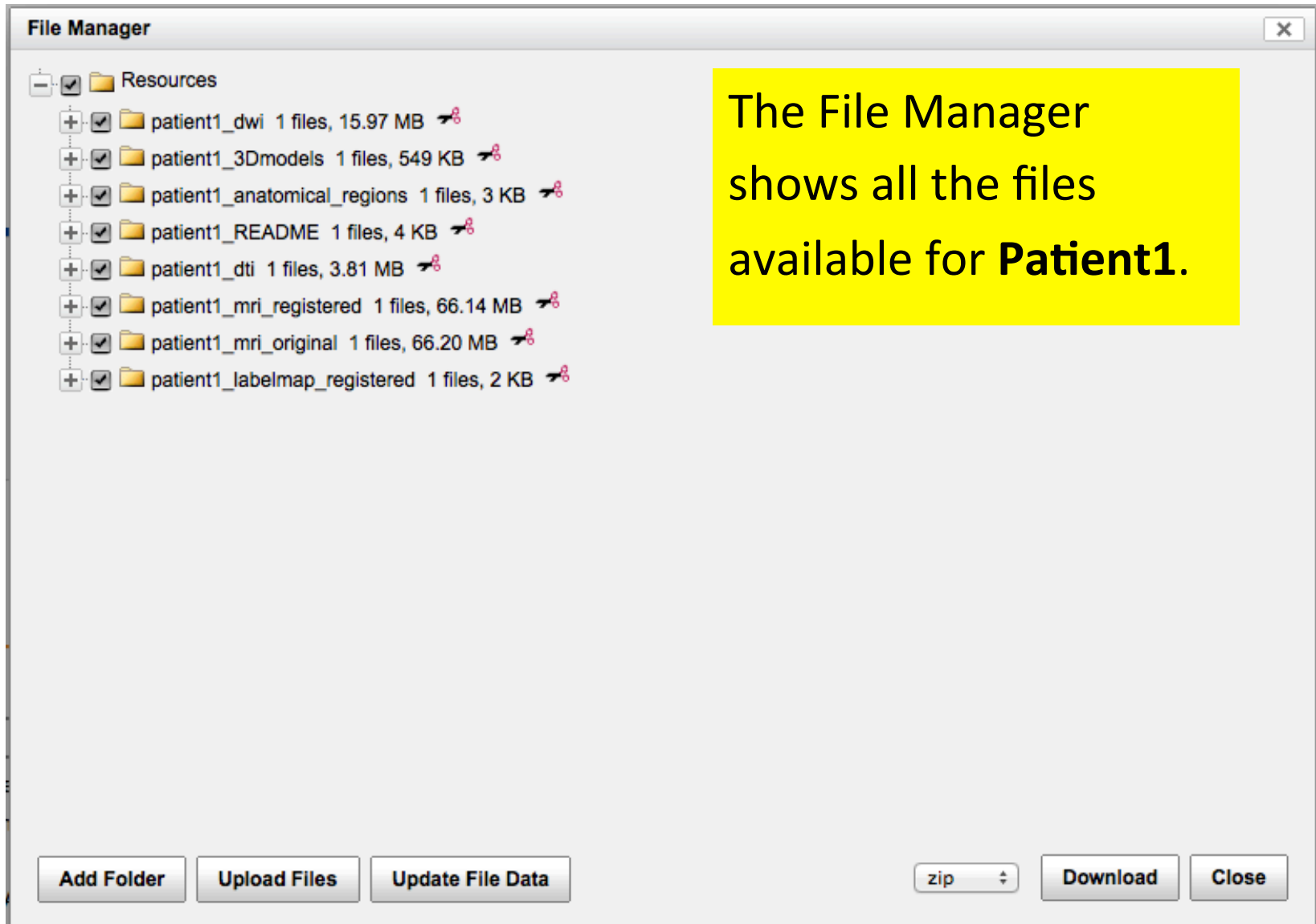
**Actions**

- Edit
- View XML
- Add Experiment
- Download XML
- Email
- Manage Files**
- Delete

**Experiments**

Date	Experiment	Project	Label
	<a href="#">MR Session</a>	DTIChallenge15	patient1_dwi
	<a href="#">MR Session</a>	DTIChallenge15	patient1_mri_original
	<a href="#">MR Session</a>	DTIChallenge15	patient1_mri_registered
	<a href="#">MR Session</a>	DTIChallenge15	patient1_labelmap_registered
	<a href="#">MR Session</a>	DTIChallenge15	patient1_3Dmodels
	<a href="#">MR Session</a>	DTIChallenge15	patient1_dti

# DTI Tractography Challenge Repository



The File Manager window displays a list of folders under the 'Resources' directory. Each folder entry includes a plus sign, a checked checkbox, a folder icon, the folder name, the number of files, the size, and a share icon. The folders listed are:

- patient1\_dwi 1 files, 15.97 MB
- patient1\_3Dmodels 1 files, 549 KB
- patient1\_anatomical\_regions 1 files, 3 KB
- patient1\_README 1 files, 4 KB
- patient1\_dti 1 files, 3.81 MB
- patient1\_mri\_registered 1 files, 66.14 MB
- patient1\_mri\_original 1 files, 66.20 MB
- patient1\_labelmap\_registered 1 files, 2 KB

At the bottom of the window, there are several buttons: 'Add Folder', 'Upload Files', 'Update File Data', a dropdown menu set to 'zip', 'Download', and 'Close'.

The File Manager shows all the files available for **Patient1**.

# DTI Tractography Challenge Repository

The screenshot shows a File Manager window with a tree view of a 'Resources' directory. The following files and folders are listed:

- patient1\_dwi (1 files, 15.97 MB)
- patient1\_dwi.zip (15.97 MB)
- patient1\_3Dmodels (1 files, 549 KB)
- patient1\_3Dmodels.zip (549 KB)
- patient1\_anatomical\_regions (1 files, 3 KB)
- patient1\_anatomical\_regions.zip (3 KB)
- patient1\_README (1 files, 4 KB)
- patient1\_README.rtf (4 KB)
- patient1\_dti (1 files, 3.81 MB)
- patient1\_dti.zip (3.81 MB)
- patient1\_mri\_registered (1 files, 66.14 MB)
- patient1\_mri\_registered.zip (66.14 MB)
- patient1\_mri\_original (1 files, 66.20 MB)
- patient1\_mri\_original.zip (66.20 MB)
- patient1\_labelmap\_registered (1 files, 2 KB)
- patient1\_labelmap\_registered.zip (2 KB)

The 'patient1\_labelmap\_registered' folder is highlighted with a blue selection bar. At the bottom of the window, there are buttons for 'Add Folder', 'Upload Files', 'Update File Data', a file type dropdown set to 'zip', 'Download', and 'Close'.

The Patient1 directory contains the following files:

- patient1\_dwi.zip
- patient1\_3Dmodels.zip
- patient1\_anatomical\_regions
- patient1\_README
- patient1\_dti.zip
- patient1\_mri\_registered.zip
- patient1\_mri\_original.zip
- patient1\_labelmap\_registered.zip

# DTI Tractography Challenge Repository



## Option 1:

Click on the names of the different .zip files to start downloading the zip archives individually

## Option 2:

Click on **Download** to download all the files at once.

# Summary

1. Log in into the XNAT Central website and create an account (<http://central.xnat.org>)
2. Send an e-mail to [contact@dti-challenge.org](mailto:contact@dti-challenge.org) with your XNAT username
3. Click on 'Patient1' and then on 'MR Session' to access the datasets for patient1
4. Click on 'Manage Files' on the right side of the screen to access the files

# Citations

- To reference the DTI Challenge in scientific publications (journal publications, conference papers, technical reports, presentations at conferences and meetings), please use the following citation:

[The DTI Challenge: Toward Standardized Evaluation of Diffusion Tensor Imaging Tractography for Neurosurgery.](#) Pujol S, Wells W, Pierpaoli C, Brun C, Gee J, Cheng G, Vemuri B, Commowick O, Prima S, Stamm A, Goubran M, Khan A, Peters T, Neher P, Maier-Hein KH, Shi Y, Tristan-Vega A, Veni G, Whitaker R, Styner M, Westin CF, Gouttard S, Norton I, Chauvin L, Mamata H, Gerig G, Nabavi A, Golby A, Kikinis R.

J Neuroimaging. 2015 Aug 11. doi: 10.1111/jon.12283