

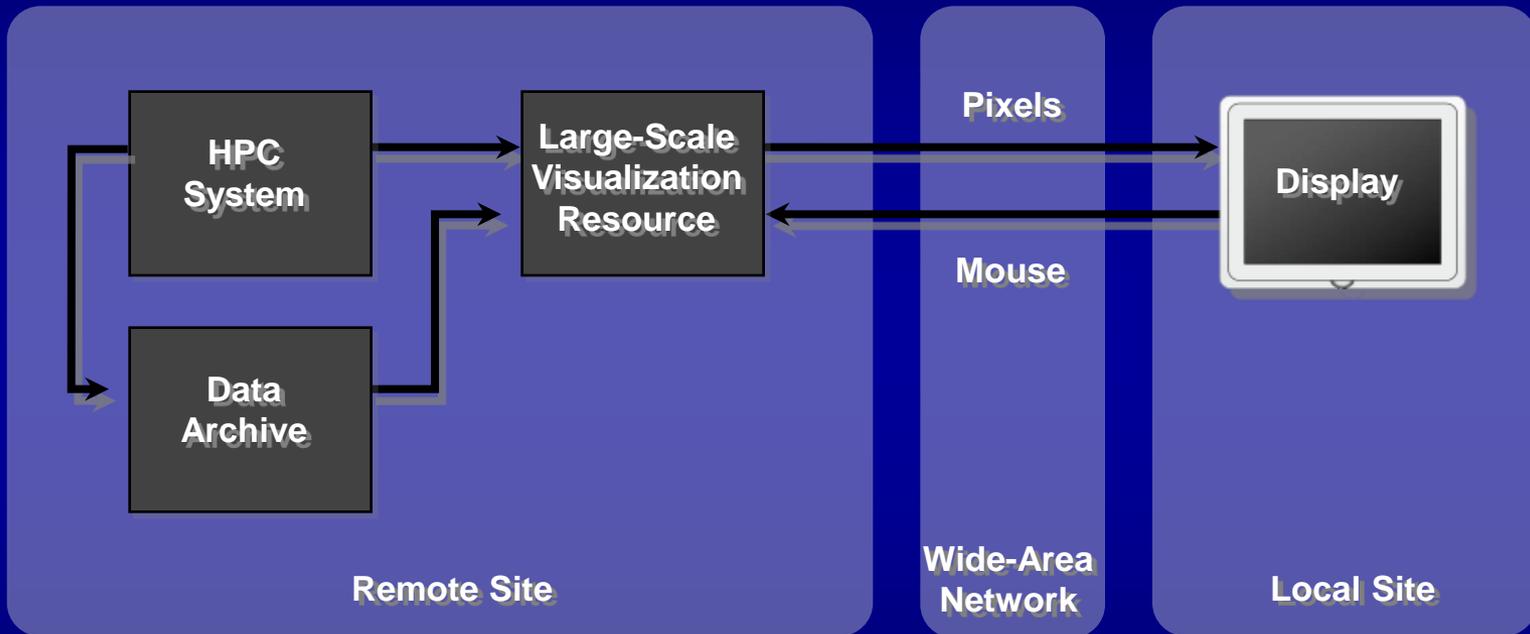
# Remote & Collaborative Visualization

Greg Johnson

# TACC Remote Visualization Systems

- **Longhorn** – Dell XD Visualization Cluster
  - 256 nodes, each with 48 GB (or 144 GB) memory, 8 cores, 2 NVIDIA Quadro FX 5800 GPUs with 4 GB graphics memory each
- **Spur** – Sun Visualization Cluster
  - 8 nodes, each with 128 GB (or 256 GB) memory, 16 cores, 4 NVIDIA Quadro FX 5600 GPUs with 1.5 GB graphics memory each
- Available for use by TACC and TeraGrid users
- Both mount Ranger's filesystems

# Remote Visualization Model

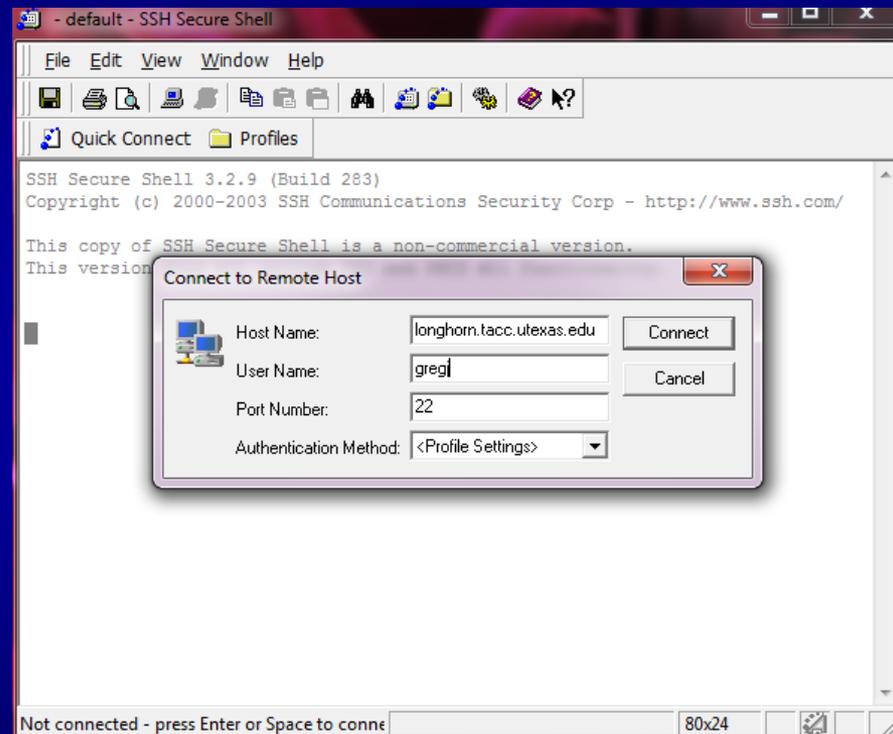


# Methods of Remote Access

- SSH
  - Basic command-line interface, useful for managing files, submitting jobs, etc.
- Longhorn Visualization Portal
  - Simplified web-based interface for:
    - Viewing your allocations
    - Submitting jobs
    - Interacting with remote vis sessions (VNC or EnVision)
- Direct VNC connection

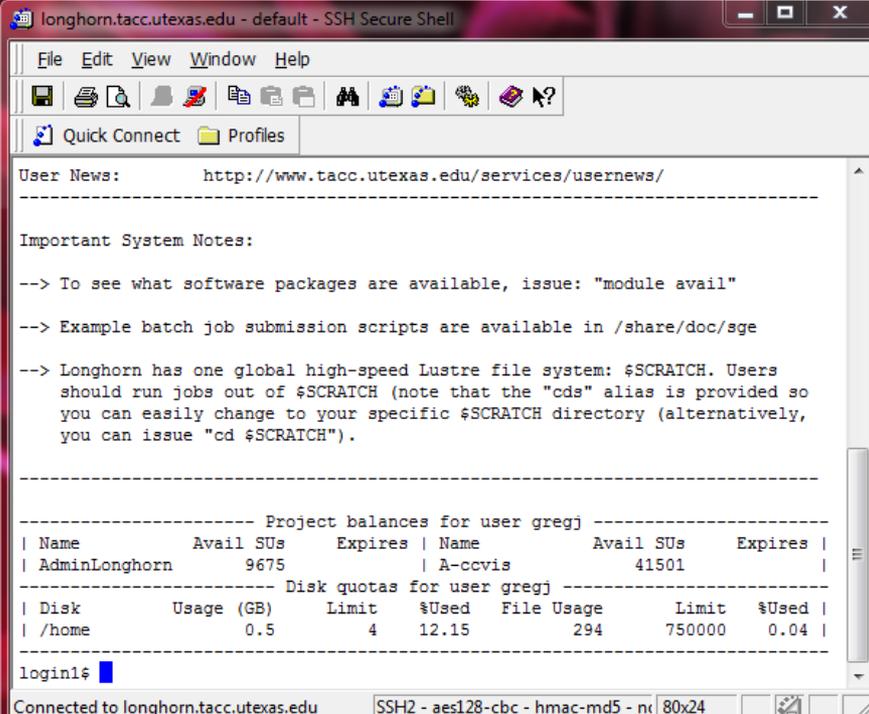
# SSH Access

- Start the “Secure Shell Client” application
- Click “Quick Connect”
  - Host Name:  
longhorn.tacc.utexas.edu
  - User Name: <your training account>
  - Click “Connect”



# SSH Access

- You're now on a Longhorn login node
- Can run usual shell utilities
- Manage data, etc.



The screenshot shows an SSH terminal window titled "longhorn.tacc.utexas.edu - default - SSH Secure Shell". The terminal displays the following content:

```
File Edit View Window Help
Quick Connect Profiles
User News: http://www.tacc.utexas.edu/services/usernews/
-----
Important System Notes:
--> To see what software packages are available, issue: "module avail"
--> Example batch job submission scripts are available in /share/doc/sgc
--> Longhorn has one global high-speed Lustre file system: $SCRATCH. Users
    should run jobs out of $SCRATCH (note that the "cds" alias is provided so
    you can easily change to your specific $SCRATCH directory (alternatively,
    you can issue "cd $SCRATCH").
-----
----- Project balances for user gregj -----
| Name      Avail SUs  Expires | Name      Avail SUs  Expires |
| AdminLonghorn  9675      | A-ccvis   41501      |
-----
Disk quotas for user gregj -----
| Disk      Usage (GB)  Limit  %Used  File Usage  Limit  %Used |
| /home     0.5         4      12.15  294         750000 0.04 |
-----
login1$
```

At the bottom of the terminal, it shows "Connected to longhorn.tacc.utexas.edu" and "SSH2 - aes128-cbc - hmac-md5 - n 80x24".

# SSH Access

- For later reference (more details in Longhorn User Guide):
  - Can submit a remote VNC job from here
    - `qsub /share/doc/sge/job.vnc`
    - `tail -f vncserver.out`
    - Connect to address in output file with a VNC viewer

```
job 3645 execution at: Wed Jan 27 14:18:16 CST 2010
running on node c201-121
using default VNC server /opt/apps/tightvnc/1.3.10/bin/vncserver
memory limit set to 46960947 kilobytes
set wayness to 8
got VNC display :1
local (compute node) VNC port is 5901
got login node VNC port 10121
Your VNC server is now running!
To connect via VNC client:  SSH tunnel port 10121 to login1.longhorn.tacc.utexas
.edu:10121

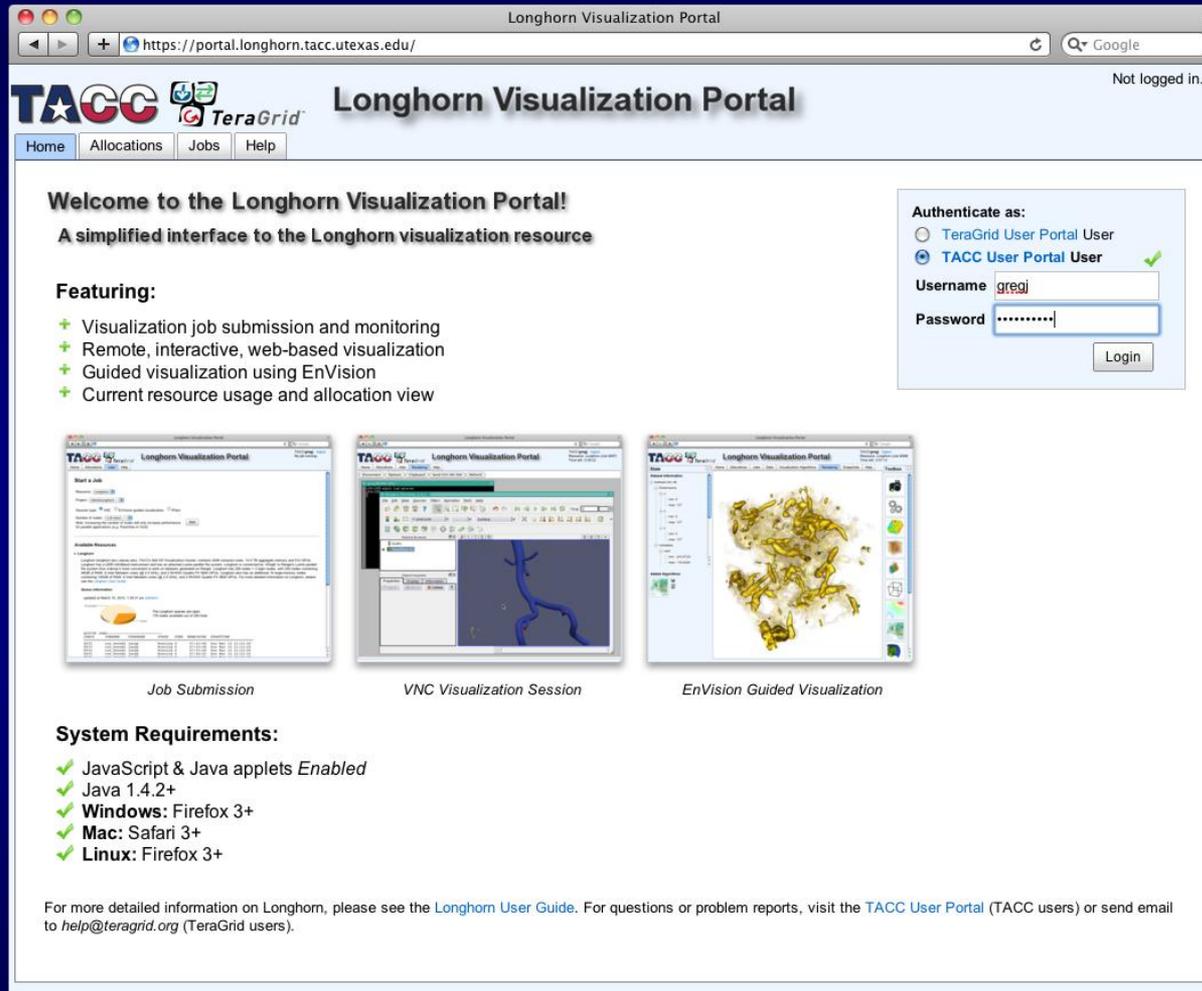
                                Then connect to localhost::10121
```

Connected to longhorn.tacc.utexas.edu SSH2 - aes128-cbc - hmac-md5 - nc 80x24

# Longhorn Visualization Portal

- <http://portal.longhorn.tacc.utexas.edu>
- A web-based interface that lets you:
  - View your allocations
  - Submit jobs
  - Interact with remote VNC or EnVision sessions
- Avoids the hassle and complexity of manually managing your jobs
- For many users this can be the primary method of interacting with Longhorn
- Advanced users may still use SSH

# Login as a TACC user with your training account (Firefox)



The screenshot shows a Firefox browser window with the address bar displaying `https://portal.longhorn.tacc.utexas.edu/`. The page title is "Longhorn Visualization Portal". The page content includes a navigation menu with "Home", "Allocations", "Jobs", and "Help". A welcome message reads: "Welcome to the Longhorn Visualization Portal! A simplified interface to the Longhorn visualization resource". A "Featuring:" section lists: "Visualization job submission and monitoring", "Remote, interactive, web-based visualization", "Guided visualization using EnVision", and "Current resource usage and allocation view". On the right, an "Authenticate as:" section has radio buttons for "TeraGrid User Portal User" and "TACC User Portal User" (which is selected). Below are fields for "Username" (containing "gregj") and "Password" (masked with dots), and a "Login" button. At the bottom, three small screenshots illustrate "Job Submission", "VNC Visualization Session", and "EnVision Guided Visualization". A "System Requirements:" section lists: "JavaScript & Java applets Enabled", "Java 1.4.2+", "Windows: Firefox 3+", "Mac: Safari 3+", and "Linux: Firefox 3+". A footer note provides contact information for the Longhorn User Guide and TACC User Portal.

Longhorn Visualization Portal

Not logged in.

**TACC** TeraGrid

Home Allocations Jobs Help

**Welcome to the Longhorn Visualization Portal!**  
A simplified interface to the Longhorn visualization resource

**Featuring:**

- + Visualization job submission and monitoring
- + Remote, interactive, web-based visualization
- + Guided visualization using EnVision
- + Current resource usage and allocation view

**Authenticate as:**

TeraGrid User Portal User

TACC User Portal User

Username:

Password:

Login

**Job Submission**

**VNC Visualization Session**

**EnVision Guided Visualization**

**System Requirements:**

- ✓ JavaScript & Java applets *Enabled*
- ✓ Java 1.4.2+
- ✓ **Windows:** Firefox 3+
- ✓ **Mac:** Safari 3+
- ✓ **Linux:** Firefox 3+

For more detailed information on Longhorn, please see the [Longhorn User Guide](#). For questions or problem reports, visit the [TACC User Portal](#) (TACC users) or send email to [help@teragrid.org](mailto:help@teragrid.org) (TeraGrid users).

# Start a VNC job

Longhorn Visualization Portal

https://portal.longhorn.tacc.utexas.edu/ Google

TACC TeraGrid Longhorn Visualization Portal TACC:gregj logout No job running.

Home Allocations Jobs Help Admin Vislab

### Start a Job

Resource: Longhorn

Project: AdminLonghorn

Session type:  VNC  EnVision guided visualization  iPlant

Number of nodes: 1 (8 slots)

*Note: increasing the number of nodes will only increase performance for parallel applications (e.g. ParaView or VisIt).*

---

### Available Resources

- Longhorn

Longhorn (longhorn.tacc.utexas.edu), TACC's Dell XD Visualization Cluster, contains 2048 compute cores, 14.5 TB aggregate memory and 512 GPUs. Longhorn has a QDR InfiniBand interconnect and has an attached Lustre parallel file system. Longhorn is connected by 10GigE to Ranger's Lustre parallel file system thus making it more convenient to work on datasets generated on Ranger. Longhorn has 256 nodes + 2 login nodes, with 240 nodes containing 48GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. Longhorn also has an additional 16 large-memory nodes containing 144GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. For more detailed information on Longhorn, please see the [Longhorn User Guide](#).

**Queue information:**

updated at March 26, 2010, 9:31:01 am ([refresh](#))

Available  Used

The Longhorn queues are open.  
211 nodes available out of 250 total.

**ACTIVE JOBS**

JOBID	JOBNAME	USERNAME	STATE	CORE	REMAINING	STARTTIME
8970	run_encodi	jangy	Running	8	14:43:32	Fri Mar 26 00:14:35
8973	run_encodi	jangy	Running	8	16:34:47	Fri Mar 26 02:05:50
8974	run_encodi	jangy	Running	8	16:45:32	Fri Mar 26 02:16:35
8975	run_encodi	jangy	Running	8	16:50:02	Fri Mar 26 02:21:05
8976	run_encodi	jangy	Running	8	17:22:02	Fri Mar 26 02:53:05
8979	vncserver	pederzan	Running	8	00:12:03	Fri Mar 26 08:43:05
8980	test-2	tc802815	Running	128	05:32:49	Fri Mar 26 09:03:51

# First time only: Set a VNC password

Longhorn Visualization Portal

https://portal.longhorn.tacc.utexas.edu/#

TACC TeraGrid Longhorn Visualization Portal

TACCgregj logout  
No job running.

Home Allocations **Jobs** Help Admin Vislab

Processing...

### Available Resources

- Longhorn

Longhorn (longhorn.tacc.utexas.edu), TACC's Dell XD Visualization Cluster, contains 2048 compute cores, 14.5 TB aggregate memory and 512 GPUs. Longhorn has a QDR InfiniBand interconnect and has an attached Lustre parallel file system. Longhorn is connected by 10GigE to Ranger's Lustre parallel file system thus making it more convenient to work on datasets generated on Ranger. Longhorn has 256 nodes + 2 login nodes, with 240 nodes containing 48GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. Longhorn also has an additional 16 large-memory nodes containing 144GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. For more detailed information on Longhorn, please see the [Longhorn User Guide](#).

**Queue information:**

updated at March 26, 2010, 9:42:51 AM



Available

Submitting job. Please wait...

**You must first set a VNC password. You can do this by clicking [here](#).** Or, you can open an SSH session to Longhorn and run the command 'vncpasswd'.

Could not submit your job on the selected resource.

Your job failed to schedule.

ACTIVE JOBS-----							
JOBID	JOBNAME	USERNAME	STATE	CORE	REMAINING	STARTTIME	
8970	run_encodi	jangy	Running	8	14:31:40	Fri Mar 26 00:14:35	
8973	run_encodi	jangy	Running	8	16:22:55	Fri Mar 26 02:05:50	
8974	run_encodi	jangy	Running	8	16:33:40	Fri Mar 26 02:16:35	
8975	run_encodi	jangy	Running	8	16:38:10	Fri Mar 26 02:21:05	
8976	run_encodi	jangy	Running	8	17:10:10	Fri Mar 26 02:53:05	
8979	vncserver	pederzan	Running	8	00:00:11	Fri Mar 26 08:43:05	
8980	test-2	tg802815	Running	128	05:20:57	Fri Mar 26 09:03:51	
8981	test	tg802815	Running	128	05:44:12	Fri Mar 26 09:27:06	
8982	vncserver	bash	Running	8	03:45:11	Fri Mar 26 09:28:05	
8983	portal_vnc	gregj	Running	8	05:48:56	Fri Mar 26 09:31:50	
8984	vncserver	xwj	Running	8	03:48:56	Fri Mar 26 09:31:50	

11 active jobs : 41 of 248 hosts ( 16.53 %)

WAITING JOBS-----							
JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME	

WAITING JOBS WITH JOB DEPENDENCIES---							
JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME	

# First time only: Set a VNC password

Longhorn Visualization Portal

https://portal.longhorn.tacc.utexas.edu/#

TACC TeraGrid Longhorn Visualization Portal

TACCgregj logout  
No job running.

Home Allocations Jobs Help Admin Vislab

Processing...

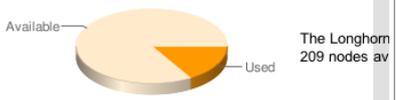
### Available Resources

- Longhorn

Longhorn (longhorn.tacc.utexas.edu), TACC's Dell XD Visualization Cluster, contains 2048 compute cores, 14.5 TB aggregate memory and 512 GPUs. Longhorn has a QDR InfiniBand interconnect and has an attached Lustre parallel file system. Longhorn is connected by 10GigE to Ranger's Lustre parallel file system thus making it more convenient to work on datasets generated on Ranger. Longhorn has 256 nodes + 2 login nodes, with 240 nodes containing 48GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. Longhorn also has an additional 16 large-memory nodes containing 144GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. For more detailed information on Longhorn, please see the [Longhorn User Guide](#).

**Queue information:**

updated at March 26, 2010, 9:42:54 am ([refresh](#))



Available Used The Longhorn 209 nodes av

**Set VNC Password**

Password:

Re-enter:

Passwords match!

ACTIVE JOBS-----									
JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME	STARTTIME	ENDTIME	ELAPSEDTIME
8970	run_encodi	jangy	Running	8		14:31:40	Fri Mar 26	00:14:35	
8973	run_encodi	jangy	Running	8		16:22:55	Fri Mar 26	02:05:50	
8974	run_encodi	jangy	Running	8		16:33:40	Fri Mar 26	02:16:35	
8975	run_encodi	jangy	Running	8		16:38:10	Fri Mar 26	02:21:05	
8976	run_encodi	jangy	Running	8		17:10:10	Fri Mar 26	02:53:05	
8979	vncserver	pederzan	Running	8		00:00:11	Fri Mar 26	08:43:05	
8980	test-2	tg802815	Running	128		05:20:57	Fri Mar 26	09:03:51	
8981	test	tg802815	Running	128		05:44:12	Fri Mar 26	09:27:06	
8982	vncserver	bash	Running	8		03:45:11	Fri Mar 26	09:28:05	
8983	portal_vnc	gregj	Running	8		05:48:56	Fri Mar 26	09:31:50	
8984	vncserver	xwj	Running	8		03:48:56	Fri Mar 26	09:31:50	

11 active jobs : 41 of 248 hosts ( 16.53 %)

WAITING JOBS-----						
JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME

WAITING JOBS WITH JOB DEPENDENCIES---						
JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME

# Start a VNC job (submit again)

Longhorn Visualization Portal

Processing...

**Available Resources**

- Longhorn

Longhorn (longhorn.tacc.utexas.edu) is a QDR InfiniBand interconnect and it is more convenient to work on data centers (@ 2.5 GHz), and 2 NVIDIA (C) (@ 2.5 GHz), and 2 NVIDIA Quadro

**Queue information:**

updated at March 26, 2010, 9:31:00

Available

**ACTIVE JOBS**

JOBID	JOBNAME	USER
8970	run_encodi	jan
8973	run_encodi	jan
8974	run_encodi	jan
8975	run_encodi	jan
8976	run_encodi	jan
8979	vncserver	pede
8980	test-2	tg8
8981	test	tg8
8982	vncserver	bas

9 active jobs : 39 of 248 hosts ( 15.73 %)

**WAITING JOBS**

JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME
-------	---------	----------	-------	------	---------	-----------

**WAITING JOBS WITH JOB DEPENDENCIES**

JOBID	JOBNAME	USERNAME	STATE	CORE	WCLIMIT	QUEUETIME
-------	---------	----------	-------	------	---------	-----------

**UNSCHEDULED JOBS**

```
-- Welcome to TACC's Longhorn Visualization System, an NSF TeraGrid Resource --
--> Checking that you specified -W...
--> Checking that you specified a time limit...
--> Checking that you specified a queue...
--> Testing that the specified project type is valid...
--> Setting Longhorn project...
--> Checking that you specified a parallel environment...
--> Checking that you specified a valid parallel environment name...
--> Checking that the minimum and maximum PE counts are the same...
--> Checking that the number of PEs requested is valid...
--> Ensuring absence of dubious h_vmem_h_data_s_vmem_s_data limits...
--> Requesting valid memory configuration (mts=31.36)...
--> Verifying HOME file-system availability...
--> Verifying SCRATCH file-system availability...
--> Checking ssh setup...
--> Checking that you didn't request more cores than the maximum...
--> Checking that you don't already have the maximum number of jobs...
--> Checking that your time limit isn't over the maximum...
--> Checking available allocation...
--> Submitting job...

Your job 8983 ("portal_vnc") has been submitted

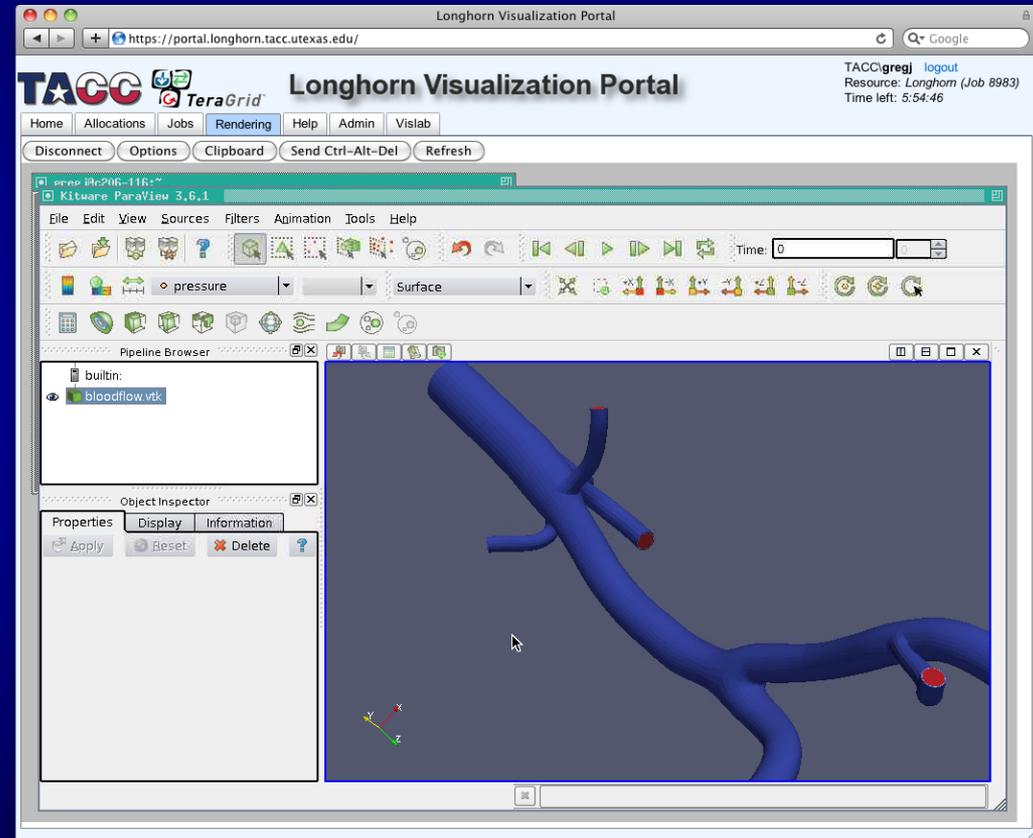
Job status is Queued ...
```

# VNC Session

The screenshot shows a web browser window with the title "Longhorn Visualization Portal". The address bar contains the URL "https://portal.longhorn.tacc.utexas.edu/". The page header includes the TACC and TeraGrid logos, the text "Longhorn Visualization Portal", and user information: "TACC\gregj", "logout", "Resource: Longhorn (Job 8983)", and "Time left: 5:59:40". Below the header is a navigation menu with buttons for "Home", "Allocations", "Jobs", "Rendering", "Help", "Admin", and "Vislab". A secondary menu contains buttons for "Disconnect", "Options", "Clipboard", "Send Ctrl-Alt-Del", and "Refresh". The main content area displays a terminal window with the title "greg.j@c206-116:~" and the prompt "c206-116\$". A cursor is visible on the line following the prompt.

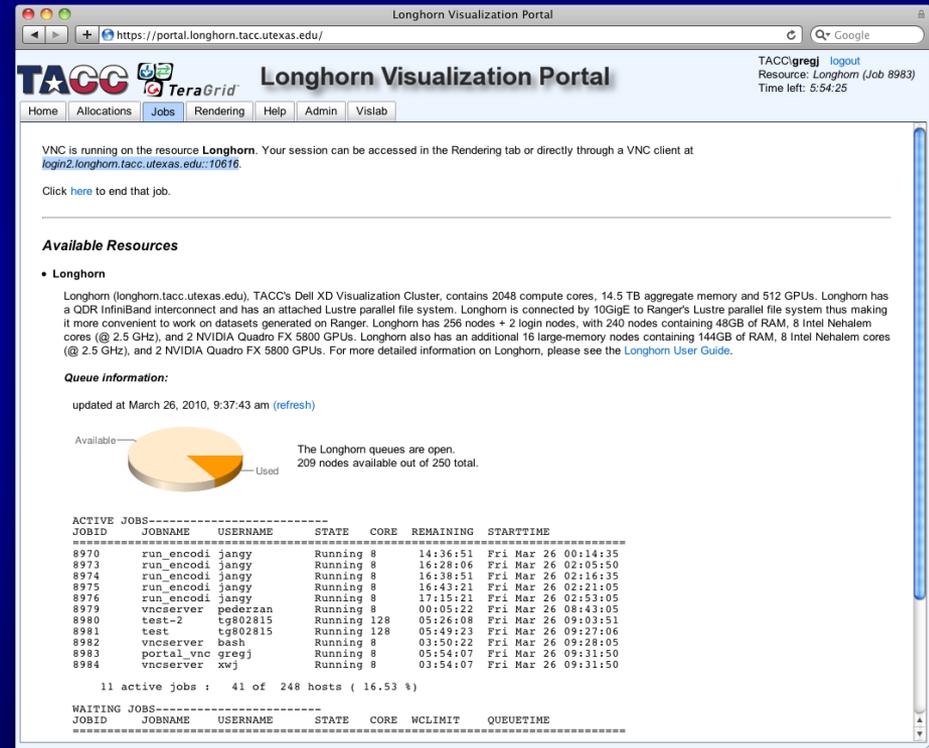
# Running Vis Applications through VNC

- To see available applications:
  - *module avail*
- Examples:
  - Run ParaView:
    - *module load paraview*
    - *vglrun paraview*
  - Run VisIt
    - *module load visit*
    - *vglrun visit*



# Accessing your VNC session with a stand-alone viewer

- Navigate to the Jobs tab
- *Copy the server address*



The screenshot shows the Longhorn Visualization Portal interface. At the top, there are navigation tabs: Home, Allocations, Jobs, Rendering, Help, Admin, and Vislab. The 'Jobs' tab is selected. Below the navigation, there is a message stating 'VNC is running on the resource Longhorn. Your session can be accessed in the Rendering tab or directly through a VNC client at [login2.longhorn.tacc.utexas.edu:10616](https://login2.longhorn.tacc.utexas.edu:10616). Click [here](#) to end that job.'

**Available Resources**

- Longhorn

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**Queue information:**  
updated at March 26, 2010, 9:37:43 am ([refresh](#))

The Longhorn queues are open.  
209 nodes available out of 250 total.

**ACTIVE JOBS**

JOBID	JOBNAME	USERNAME	STATE	CORE	REMAINING	STARTTIME
8970	run_encodi	jangy	Running	8	14:36:51	Fri Mar 26 00:14:35
8973	run_encodi	jangy	Running	8	16:28:06	Fri Mar 26 02:05:50
8974	run_encodi	jangy	Running	8	16:38:51	Fri Mar 26 02:16:35
8975	run_encodi	jangy	Running	8	16:43:21	Fri Mar 26 02:21:05
8976	run_encodi	jangy	Running	8	17:15:21	Fri Mar 26 02:53:05
8979	vncserver	pederzan	Running	8	00:05:22	Fri Mar 26 08:43:05
8980	test-2	tg802815	Running	128	05:26:08	Fri Mar 26 09:03:51
8981	test	tg802815	Running	128	05:49:23	Fri Mar 26 09:27:06
8982	vncserver	bash	Running	8	03:50:22	Fri Mar 26 09:28:05
8983	portal_vnc	gregj	Running	8	05:54:07	Fri Mar 26 09:31:50
8984	vncserver	xwj	Running	8	03:54:07	Fri Mar 26 09:31:50

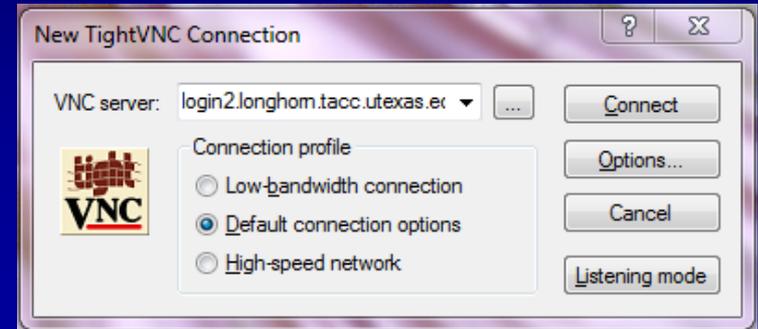
11 active jobs : 41 of 248 hosts ( 16.53 %)

**WAITING JOBS**

JOBID	JOBNAME	USERNAME	STATE	CORE	NCLIMIT	QUEUETIME
-------	---------	----------	-------	------	---------	-----------

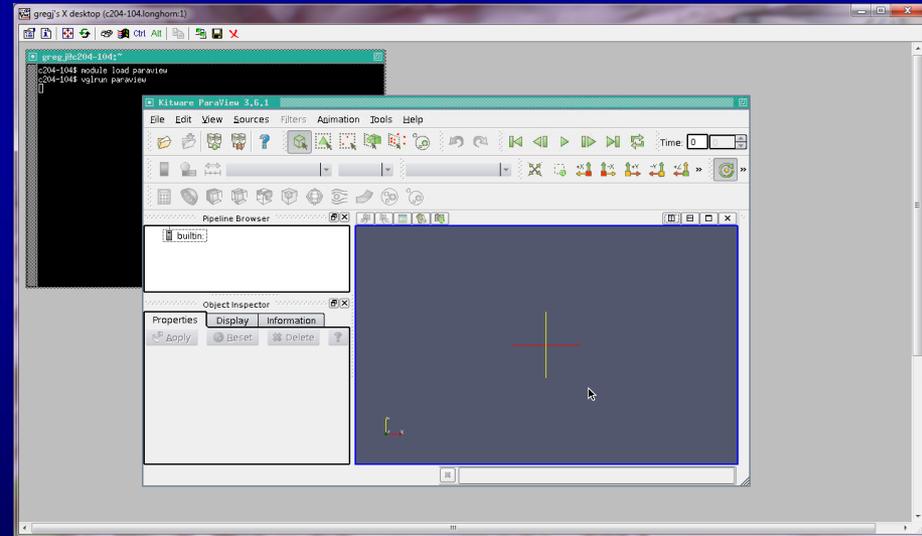
# Accessing your VNC session with a stand-alone viewer

- Navigate to the Jobs tab
- Copy the server address
- *Run the “TightVNC Viewer” application*
  - Enter the server address from the Jobs tab
  - Click Connect
  - Enter your VNC password set previously
  - Click Okay



# Accessing your VNC session with a stand-alone viewer

- Navigate to the Jobs tab
- Copy the server address
- Run the “TightVNC Viewer” application
  - Enter the server address from the Jobs tab
  - Click Connect
  - Enter your VNC password set previously
  - Click Okay
- *You can now interact with your VNC session (and share this session with your collaborators)*



# Parallel Visualization

- You can specify how many nodes (or slots) to use during job submission
- Run vis applications in the parallel environment

### Start a Job

Resource:

Project:

Session type:  VNC  EnVision guided visualization

Number of nodes:

*Note: increasing the number of nodes will only increase performance for parallel applications (e.g. ParaView or VisIt).*

Click [here](#) to set your VNC password.

Longhorn Visualization Portal

https://portal.longhorn.tacc.utexas.edu/

TACC TeraGrid Longhorn Visualization Portal

TACC|gregj logout  
Resource: Longhorn (Job 28988)  
Time left: 5:52:53

Home Allocations Jobs Rendering Help Admin Vislab

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

Kitware ParaView 3.6.1

File Edit View Sources Filters Animation Tools Help

ProcessId Surface

Time: 0

Pipeline Browser

- cs://localhost:11111
- isotropic.bin.vtk
- Contour2
- ProcessIdScalars1

Object Inspector

Properties Display Information

Apply Texture None

Color by ProcessId

Edit Color Map... Rescale to D

Slice

Slice Direction

Slice

Annotation

Show cube axes Edit

Style

Representation Surface

# EnVision Guided Visualization

- An easy-to-use web-based tool for remote scientific visualization
- Available through the Longhorn Vis Portal
- Developed at TACC
  - Funded in part by TeraGrid and the DoD PET program
  - Development team: Greg Johnson, Steve Mock, Brandt Westing, Matthew Hanlon

# Run an EnVision session

- Navigate back to the “Jobs” tab
- End your current job
- Select the session type “EnVision guided visualization”

Longhorn Visualization Portal

TACC gregj logout  
No job running.

Home Allocations Jobs Help Admin Vislab

### Start a Job

Resource: Longhorn  
Project: AdminLonghorn  
Session type:  VNC  EnVision guided visualization  iPlant

Start

### Available Resources

- Longhorn

Longhorn (longhorn.tacc.utexas.edu), TACC's Dell XD Visualization Cluster, contains 2048 compute cores, 14.5 TB aggregate memory and 512 GPUs. Longhorn has a QDR InfiniBand interconnect and has an attached Lustre parallel file system. Longhorn is connected by 10GigE to Ranger's Lustre parallel file system thus making it more convenient to work on datasets generated on Ranger. Longhorn has 256 nodes + 2 login nodes, with 240 nodes containing 48GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. Longhorn also has an additional 16 large-memory nodes containing 144GB of RAM, 8 Intel Nehalem cores (@ 2.5 GHz), and 2 NVIDIA Quadro FX 5800 GPUs. For more detailed information on Longhorn, please see the [Longhorn User Guide](#).

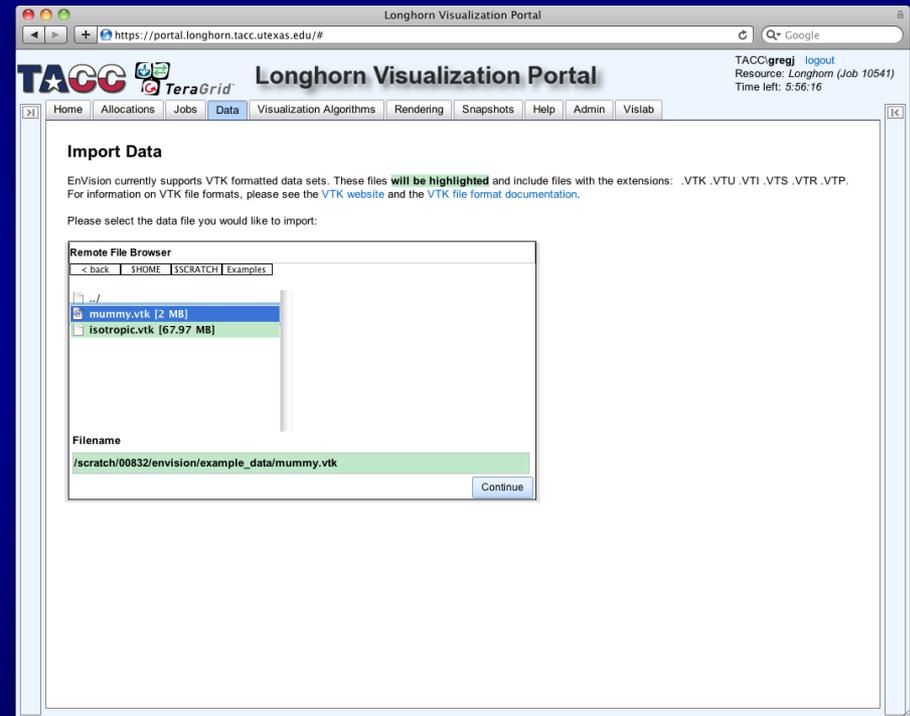
**Queue information:**  
updated at April 9, 2010, 3:58:54 pm ([refresh](#))

The Longhorn queues are open.  
82 nodes available out of 250 total.

JOBID	JOBNAME	USERNAME	STATE	CORE	REMAINING	STARTTIME
10476	vnserver	gda	Running	512	03:15:34	Fri Apr 9 07:14:28
10485	vnserver	mitchell	Running	128	01:41:49	Fri Apr 9 11:40:43
10489	af-rhom-v7	tg802815	Running	128	01:58:05	Fri Apr 9 11:56:59
10495	job.tr.ste	pnav	Running	32	20:30:04	Fri Apr 9 12:28:58
10491	vnserver	mitchell	Running	128	02:30:34	Fri Apr 9 12:29:28
10491	af-rhom-v7	tg802815	Running	128	02:38:19	Fri Apr 9 12:37:13

# Run an EnVision session

- *Load the mummy data in the remote file browser (click the Examples shortcut)*



Longhorn Visualization Portal

https://portal.longhorn.tacc.utexas.edu/#

TACC TeraGrid Longhorn Visualization Portal

Home Allocations Jobs Data Visualization Algorithms Rendering Snapshots Help Admin Vislab

TACC:gregj logout  
Resource: Longhorn (Job 10541)  
Time left: 5:56:16

### Import Data

EnVision currently supports VTK formatted data sets. These files **will be highlighted** and include files with the extensions: .VTK .VTU .VTI .VTS .VTR .VTP. For information on VTK file formats, please see the [VTK website](#) and the [VTK file format documentation](#).

Please select the data file you would like to import:

Remote File Browser

< back | HOME | SCRATCH | Examples

mummy.vtk [2 MB]

isotropic.vtk [67.97 MB]

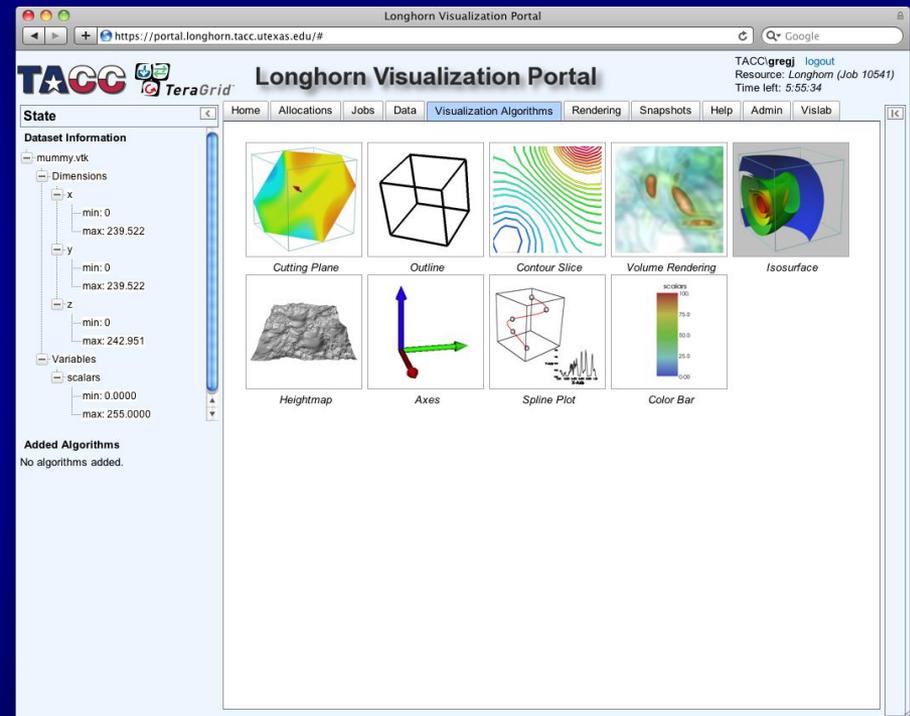
Filename

/scratch/00832/envision/example\_data/mummy.vtk

Continue

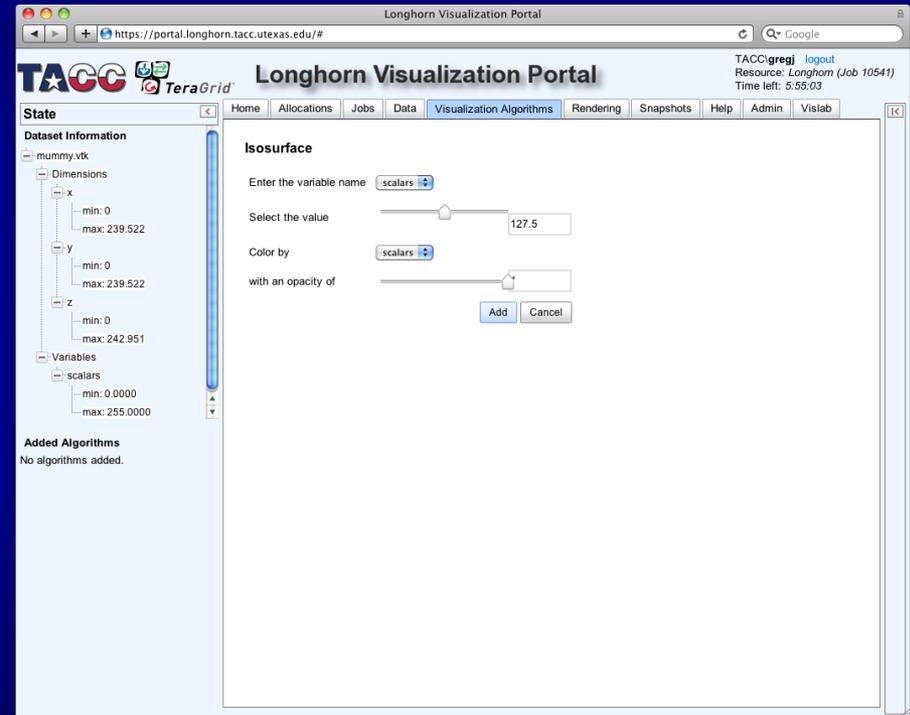
# Run an EnVision session

- Load the mummy data in the remote file browser (click the Examples shortcut)
- *Click the Isosurface icon*



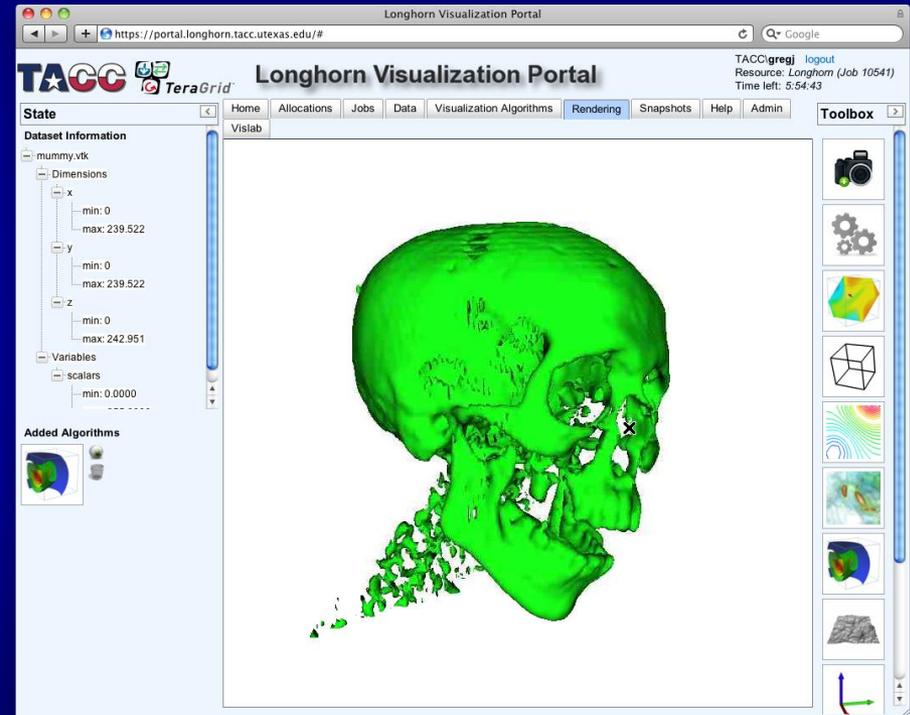
# Run an EnVision session

- Load the mummy data in the remote file browser (click the Examples shortcut)
- Click the Isosurface icon
- *Add an isosurface with default parameters*



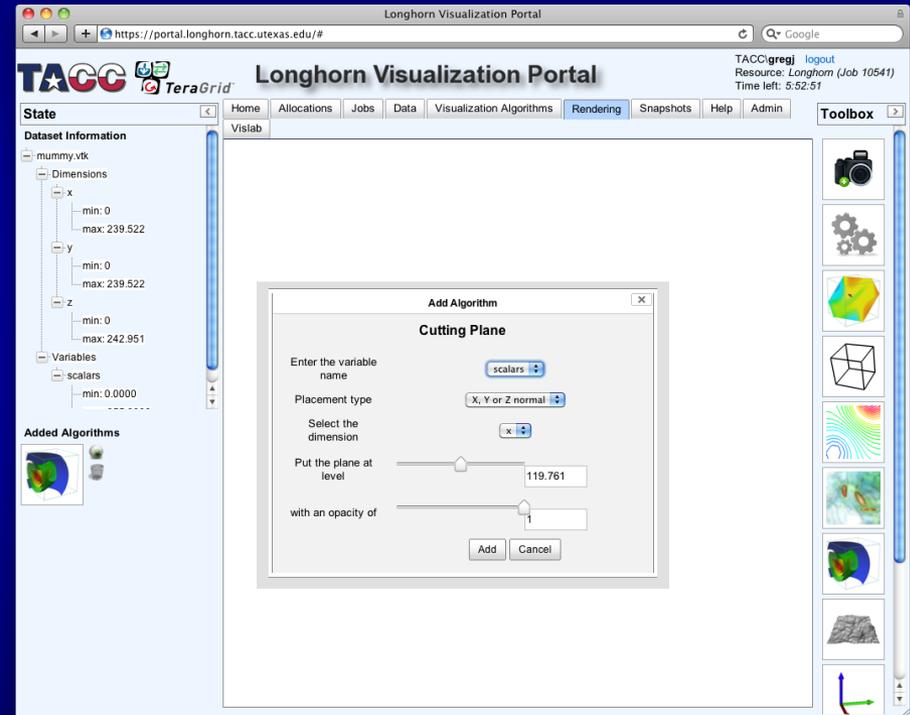
# Run an EnVision session

- Load the mummy data in the remote file browser (click the Examples shortcut)
- Click the Isosurface icon
- Add an isosurface with default parameters
- *See the visualization in the Rendering tab*



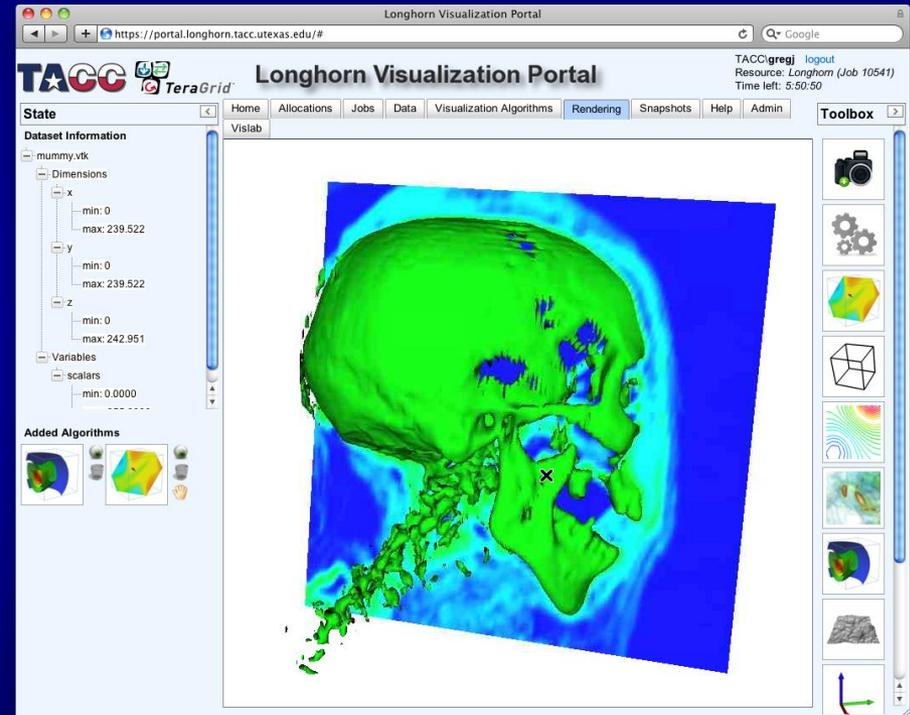
# Run an EnVision session

- *Click the cutting plane icon in the toolbox*



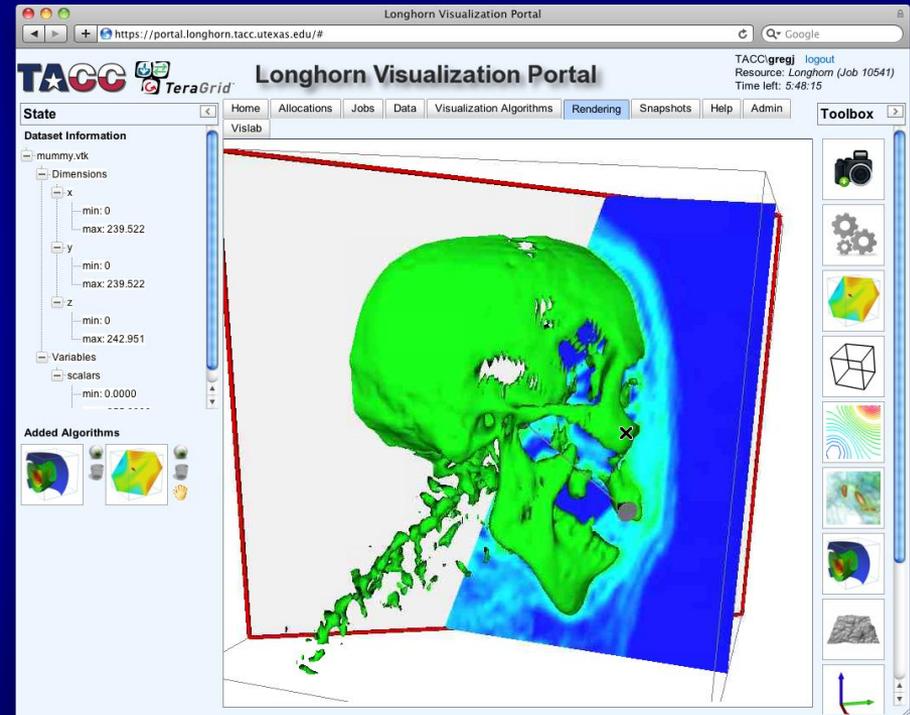
# Run an EnVision session

- Click the cutting plane icon in the toolbox
- *Keep the default values; click Add*



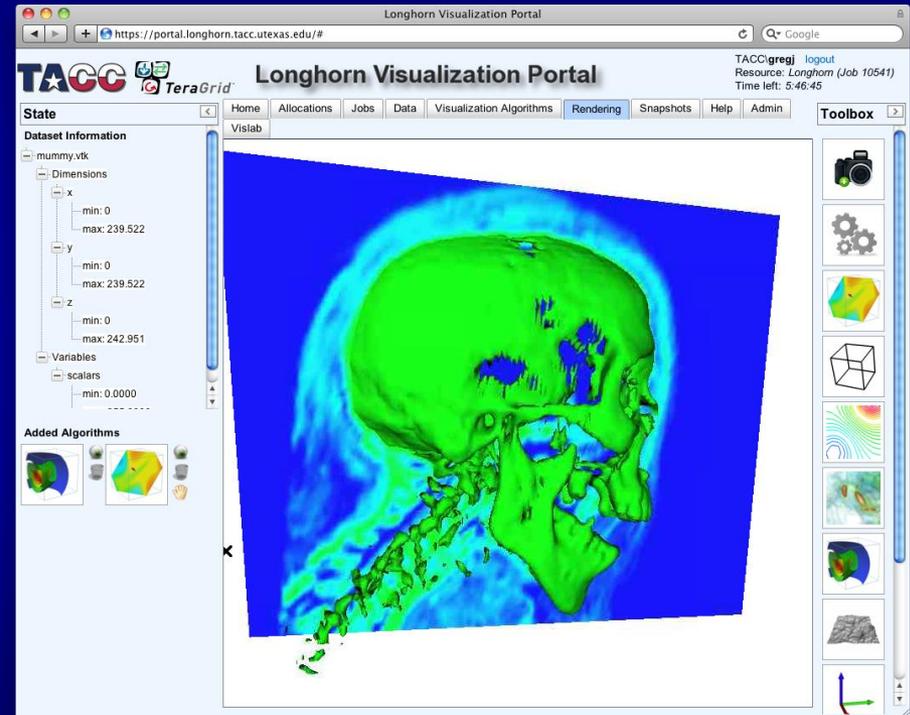
# Run an EnVision session

- Click the cutting plane icon in the toolbox
- Keep the default values; click Add
- *Click the hand next to the cutting plane under Added Algorithms; use the widget to interact*



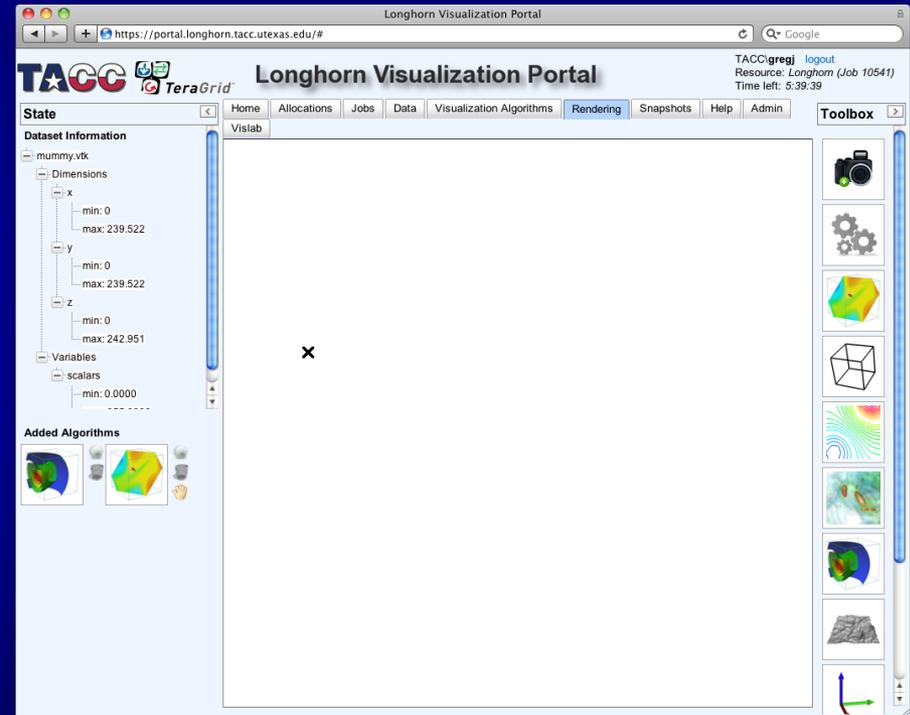
# Run an EnVision session

- Click the cutting plane icon in the toolbox
- Keep the default values; click Add
- Click the hand next to the cutting plane under Added Algorithms; use the widget to interact
- *Click the hand again*



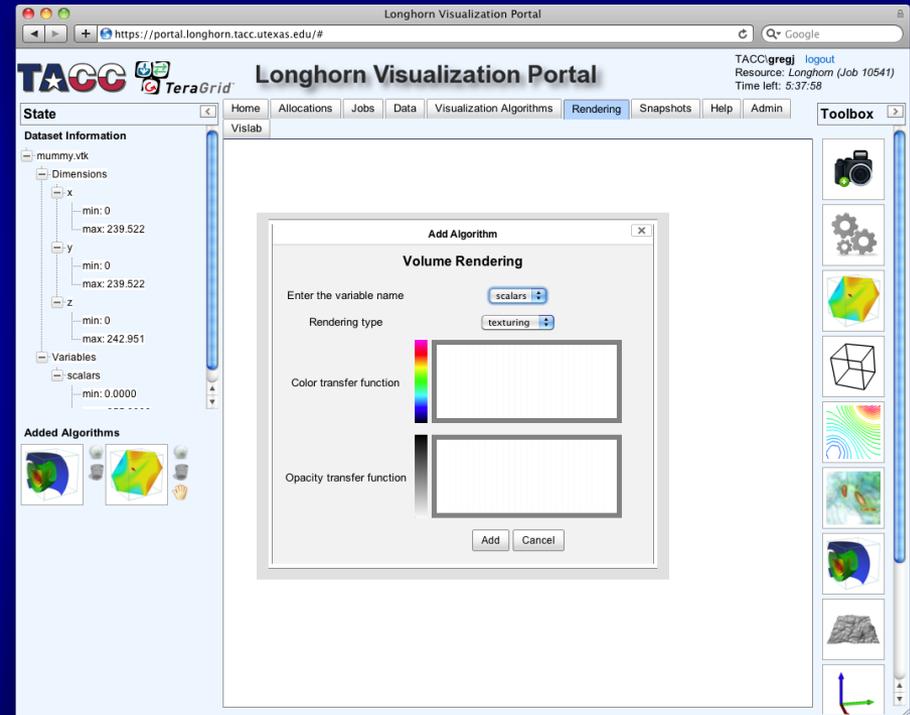
# Run an EnVision session

- *Click the Eye next to each added vis algorithm to hide*



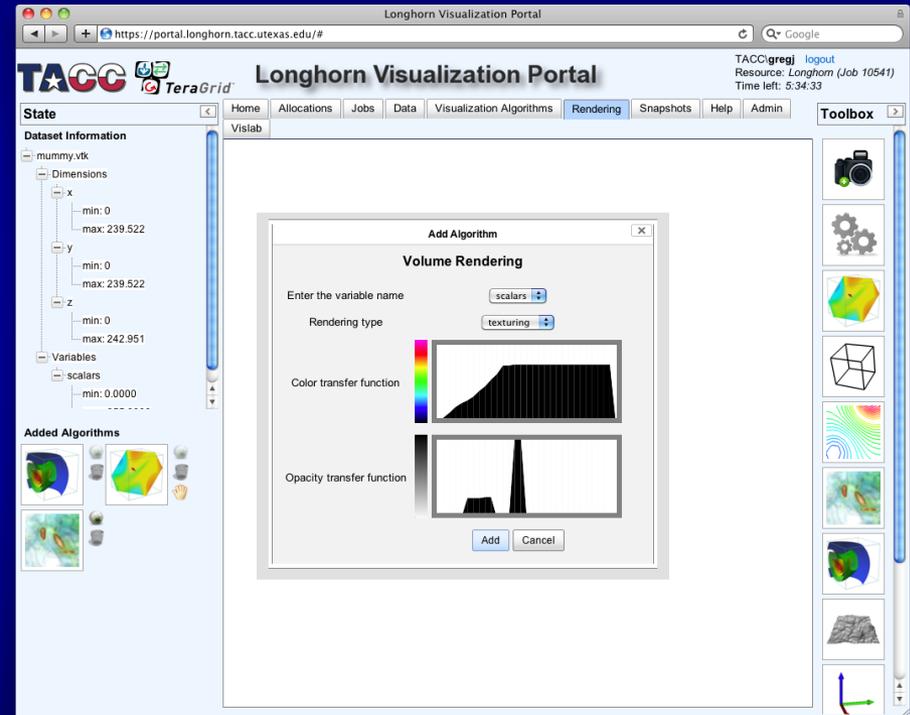
# Run an EnVision session

- Click the Eye next to each added vis algorithm to hide
- *Click volume rendering icon in the toolbox*



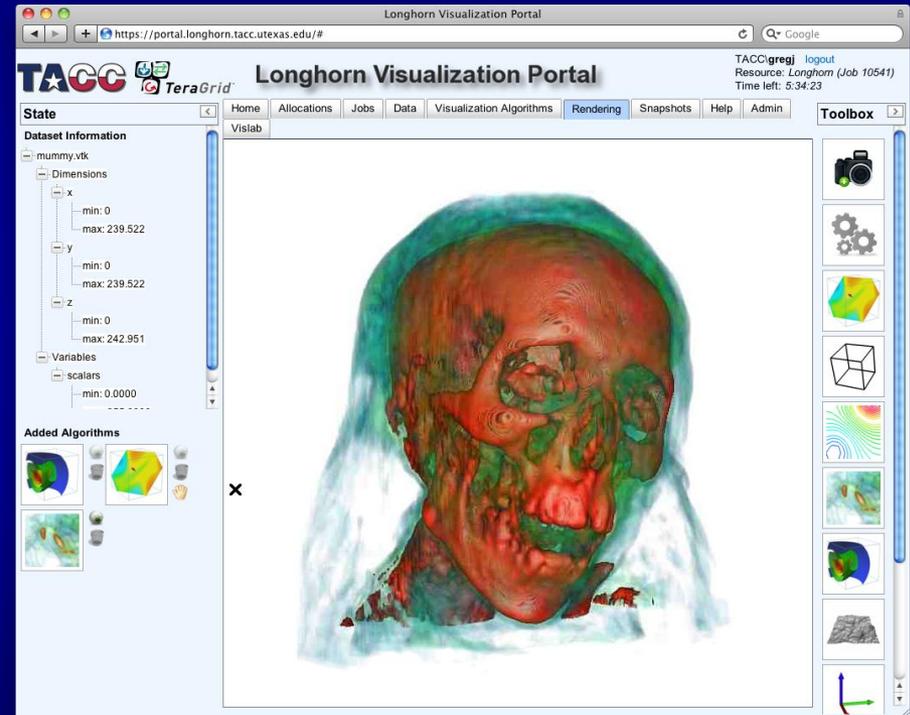
# Run an EnVision session

- Click the Eye next to each added vis algorithm to hide
- *Click volume rendering icon in the toolbox*
- *Set values as shown and click Add*



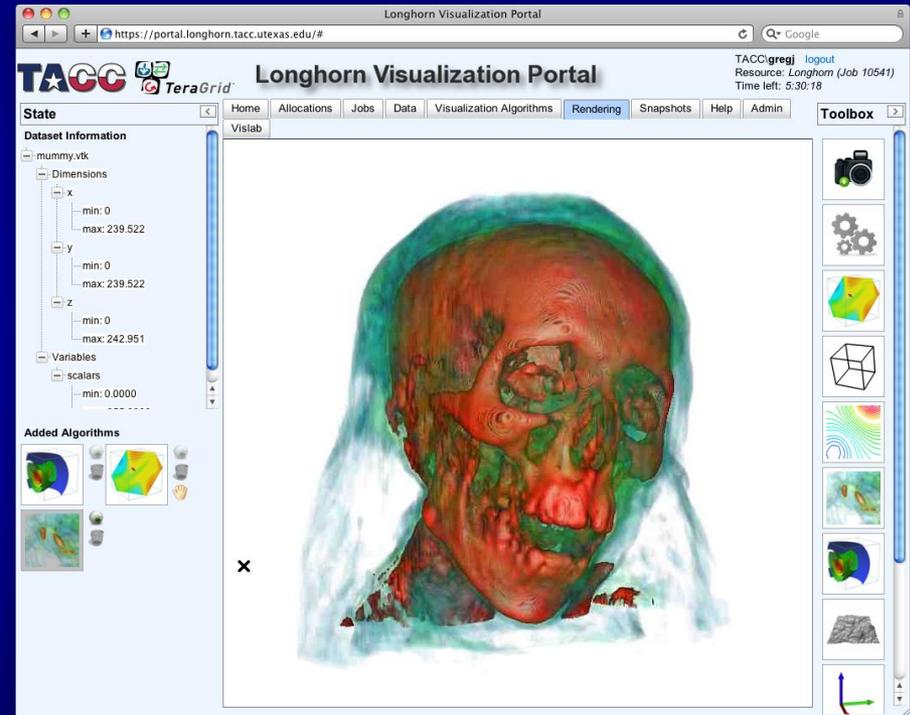
# Run an EnVision session

- Click the Eye next to each added vis algorithm to hide
- *Click volume rendering icon in the toolbox*
- *Set values as shown and click Add*



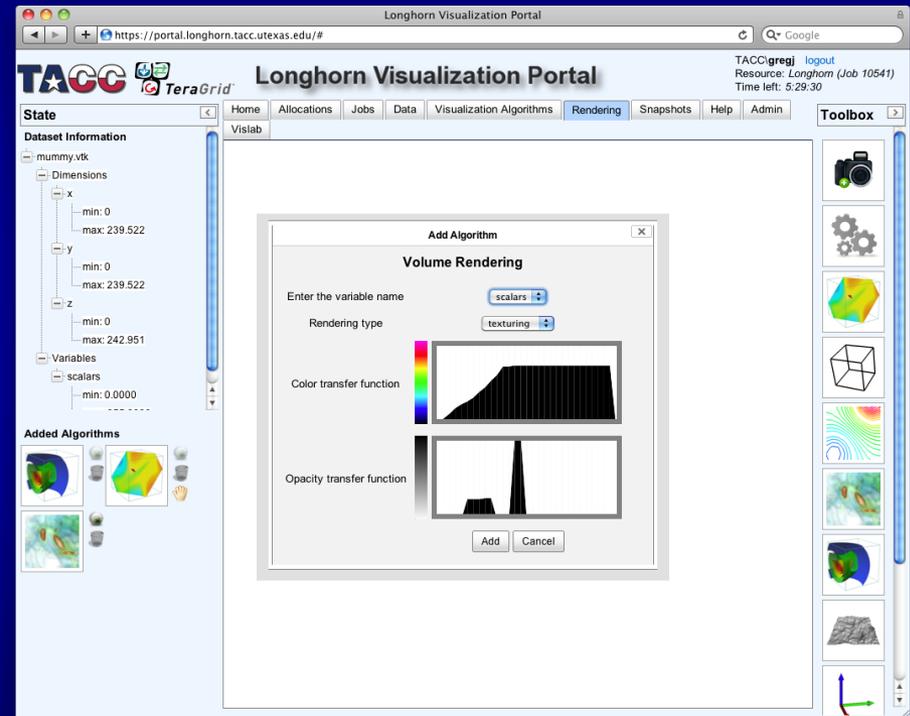
# Run an EnVision session

- Click the Eye next to each added vis algorithm to hide
- Click volume rendering icon in the toolbox
- Set values as shown and click Add
- *Click volume rendering icon in lower left; change settings as you wish*



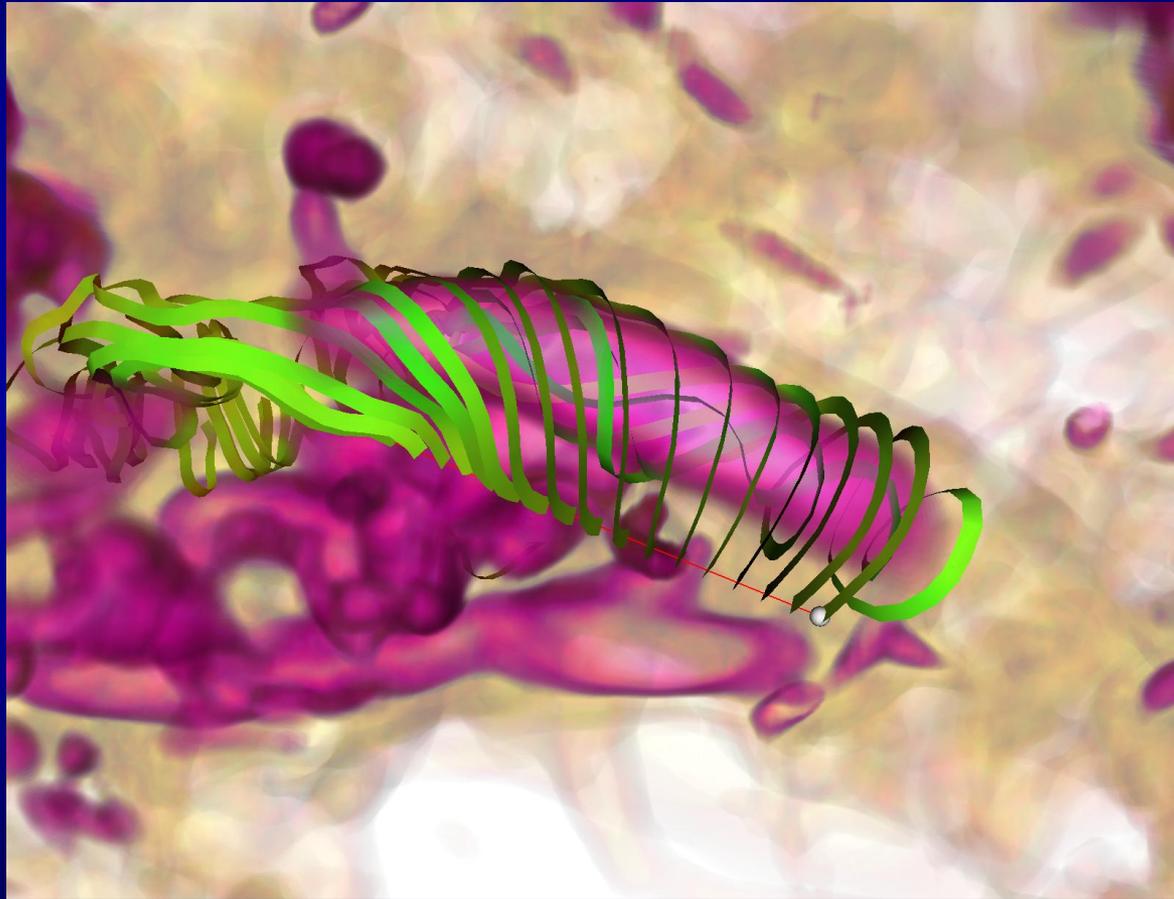
# Run an EnVision session

- Click the Eye next to each added vis algorithm to hide
- Click volume rendering icon in the toolbox
- Set values as shown and click Add
- *Click volume rendering icon in lower left; change settings as you wish*



# Run an EnVision session

- Explore the isotropic turbulence example data on your own



Questions?

[gregj@tacc.utexas.edu](mailto:gregj@tacc.utexas.edu)