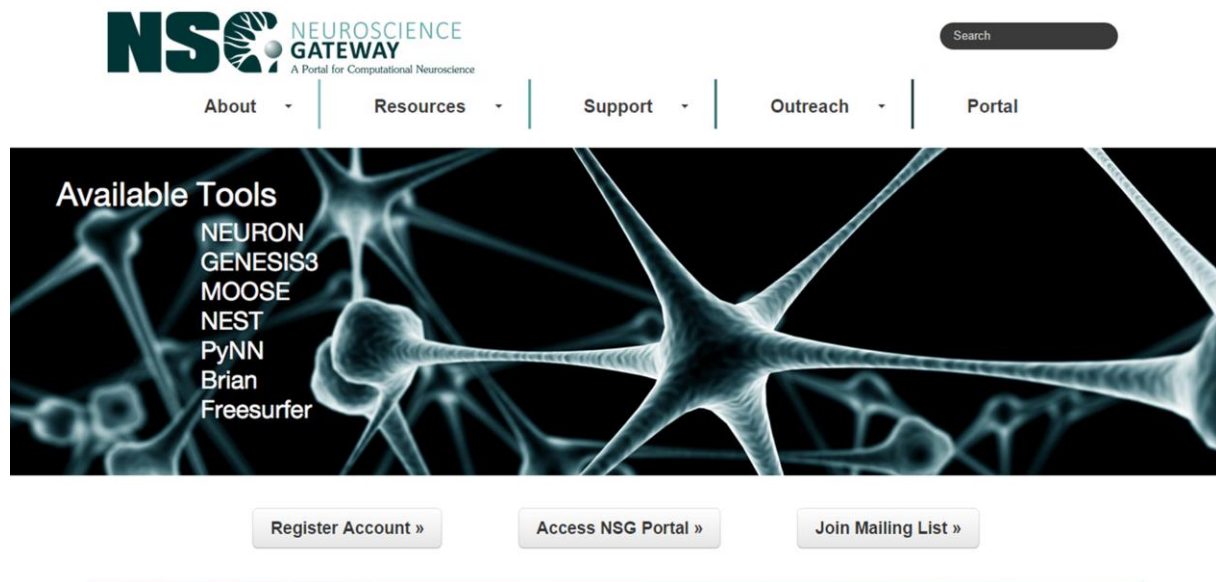


How to use the NSG portal

The following are steps describing how to submit neuronal models that can be run on HPC resources using NSG.

1) Navigate to the NSG portal at <http://www.nsgportal.org/>, and click Go to the NSG Portal



2) If you do not already have an account, fill out the form and email it to nsghelp@sdsc.edu

Missing results?
Send us the [job handle](#), and we may be able to help.

More Information

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[User locations](#)

[Enabled publications](#)

[Latest News](#)

Welcome to NSGportal! Currently NEURON, PGENESIS, NEST, BRIAN, and PyNN codes can be run on Trestles, HPC resource at SDSC. Please login to proceed

First Time Users: Please review our [usage policies](#)

New users who are interested in getting an account should fill out the [form](#) and email it to nsghelp@sdsc.edu



NSGPortal Login

*Username:

*Password:

[Forgot Password?](#)

3) Once you log in, create a new folder

Folders

- Tester
- Data (0)
- Tasks (0)

Welcome linett Neuroscience Gateway - NSG

Create New Folder

Current Folder Details

Label	Tester
Description	for rehs

Create Subfolder Edit Folder Delete Folder

6) Upload the file on the NSG portal using the upload/enter data button under the data tab in your folder.

Please note that NSG Portal can only support input files uploaded as a zip file. If you are uploading your own model, please create a folder with your input files and any necessary subdirectories. Compress the folders and upload the zipped file version.

Folders

- Tester
 - Data (0)
 - Tasks (0)

There is currently no data in this folder.
What would you like to do?

Upload/Enter Data

Create a Task

7) Select the file from your downloads, and save the data. Then, from the tasks tab, create a new task.

- Folders
- Tester
 - Data (1)
 - Tasks (0)

There are currently no tasks in this folder.

Create New Task

8) From this window, you can set the necessary information pertaining to this new task. First, Name it, so you can differentiate from other tasks you may run later. Next, Click on Select input data.

Folders
↳ **Tester**
↳ Data (1)
↳ Tasks (0)

Create new task

Task Summary | **Select Data** | Select Tool | Set Parameters

You may edit your task using the tabs above.
Current CPU Hr Usage: 0 [Explain this?](#)

Description

Input

Tool

Input Parameters

Saved tasks can be run later from the task list

9) From the Select Input Data tab, select which piece of data you wish to run and click the select data button.

Tools

[Brian](#) (1.4.1) ⓘ - Brian is a simulator for spiking neural networks

[NEST](#) (2.2.1) ⓘ - Neural Simulation Technology using Python

[NEST](#) (2.2.1) ⓘ - Neural Simulation Technology

[NEURON7.3](#) (7.3) ⓘ - Latest NEURON simulation software package

[NEURON](#) (7.2) ⓘ - NEURON is a simulation environment for modeling individual neurons and networks of neurons.

[PGGENESIS](#) (2.3) ⓘ - Parallel Genesis software

[PyNN](#) (0.7.5) ⓘ - Python package for simulator-independent specification of neuronal network models

If there is a tool or a feature you need, let us know at nsqhelp@sdsc.edu.

11) Next, modify the parameters. Under the set parameters tab, there are many options to choose from. Most importantly, you must choose the correct main input filename.

In this case, the main filename is Batch.hoc. Change this on the NSG Portal

The screenshot shows a web form titled "Simple Parameters" with a sub-header "OPEN / CLOSE". The form contains several input fields, each with a help link and an asterisk indicating a required field:

- Maximum Hours to Run (click here for help setting this correctly) ***: Input field containing "0.5".
- Enter Main Input Filename (click here for help setting this correctly) ***: Input field containing "Batch.hoc".
- Enter sub-directory name (OPTIONAL - click here for help setting this correctly)**: Input field, currently empty, highlighted with a red box. A red arrow points to it from the label "Sub-directory Box" below.
- Enter Number of Nodes (click here for help setting this correctly) ***: Input field containing "1".
- Enter Number of Cores per Node (click here for help setting this correctly) ***: Input field containing "8".

Below the form are three buttons: "Save Parameters", "Reset", and "Cancel". At the bottom, there is a section titled "Advanced Help" with a sub-header "OPEN / CLOSE".

***If the main file is not in the top directory, type the directory name of which the main file is in into the sub-directory name box.*

12) Next, set the desired number of cores and nodes. ** If the model is not in parallel, set both nodes and cores to 1.**


```
File: E_FFFBX_fixed_10.hoc
Procedure (e_fffbx) defines the weight and delay between the ongoing
FF and FB input to the SI network, with a different weight during the
period in which an evoked response is simulated (550-850ms).

File: scale_ep_thresh.hoc
Defines the properties of the simulated "evoked response" input by
specifying weights, delays, synapse type, and post-synaptic dendritic
target compartments numbers.

File: dipole.hoc
Creates a template that defines the "dipole current" for each
cells. The dipole current is the measure of a magnetoencephalography
(MEG) signal.

File: batch.hoc
Calls in all the necessary files, sets default parameters, initial
conditions, and runs the simulations creating 26 runs of a 1500ms
simulation of an ongoing mu rhythm with a simulated evoked response
starting at 450ms.

Folder: STATES
Contains data files for all of the initial conditions.

Folder: mod_files
The .mod files. In addition the default hh mechanism is used.

Usage instructions:
This version of the model was parallelized by Michael Hines. Please
check your NEURON version (the message that neuron outputs when
started). For example, running nrniv might display NEURON -- VERSION
7.2 (499:91db257165c4) 2011-01-25. The number before the colon needs
to be greater than or equal to 499 as above.

After unzipping the attached file (on the parallel cluster master) and
cd'ing to the created folder compile the mod files with the command

nrnivmodl mod_files

and then type

mpirun -n 4 nrniv -mpi Batch.hoc

replacing the 4 above with a number of processors that you have
available.

20120409 euler method updated to cnexp in km.mod, kca.mod, cat.mod,
ca.mod, and ar.mod; and updated to derivimplicit in cad.mod as per
http://www.neuron.yale.edu/phpBB/viewtopic.php?f=2&t=592
```

Since this model has been parallelized already, we will leave nodes at 1 and cores at 8.

13) Once you save the parameters, save and run the task.

You may edit your task using the tabs above. Current CPU Hr Usage: 0 [Explain this?](#)

* Required

*Description:

*Input: 1 Inputs Set

*Tool: NEURON7.3 [click for more info](#)

Parameters: 4 Parameters Set

Save Task Save and Run Task Discard Task

Saved tasks can be run later from the task list Your task will be saved Clear all user-entered information

XSEDE tasks are limited to 320 hours per job task.

14) You can see the task is complete when the output column is no longer empty.

Refresh Tasks Current CPU Hr Usage: 0 [Explain this?](#)

There is currently 1 data item in this tab.

Show 20 records on each page « < Page 1 of 1 > »

<input type="checkbox"/>	Select all	Label	Tool	Input	Parameters	Output	Date Created	Action
<input type="checkbox"/>	Clone	Jones et al. 2009	NEURON7.3	View (1)	View (4)	View (2)	7/30/13, 09:23	View Output

Move selected to test [GO](#) [Create New Task](#)

[Delete Selected](#)

15) Click the view output button. There should be three files. One Standard output, one standard error, and a zipped output file.

Check the Standard error file first to make sure there were no errors when running

View Task Output



Click on an output file below to review its contents.

<input type="checkbox"/> Select all	Tool Output	File Name	File Size (Bytes)		
<input type="checkbox"/>	PROCESS_OUTPUT	STDOUT	67	View	Download
<input type="checkbox"/>		STDERR	376	View	Download
<input type="checkbox"/>	outputfile	output.tar.gz	546299	View	Download

[Download Selected](#)

[View Current Task](#)

[Return to Task List](#)

In this case, there were none

View Task Output Details



Save To Current Folder

Return

Download File

Tool:	NEURON7.3
File Name:	STDERR
File Size:	376 Bytes

Size (Bytes)

376

Show/Hide Output Contents

```
NEURON -- Release 7.3 (849:5be3d097b917) 2013-04-11
Duke, Yale, and the BlueBrain Project -- Copyright 1984-2013
See http://www.neuron.yale.edu/neuron/credits

Additional mechanisms from files
mod_nsgportal/ar.mod mod_nsgportal/cad.mod mod_nsgportal/ca.mod mod_nsgportal/cat.mod mod_nsgporta
l/dipole.mod mod_nsgportal/kca.mod mod_nsgportal/km.mod mod_nsgportal/pp_dipole.mod
```

16) Now, download the zipped file to view the data. The output file will always download as output.tar.gz. Use a program such as winzip or 7zip to unzip the folder and view contents

C:\Users\279user\Downloads\output.tar.gz\output.tar\

File Edit View Favorites Tools Help

Add Extract Test Copy Move Delete Info

C:\Users\279user\Downloads\output.tar.gz\output.tar\

Name	Size	Packed Size	Modified	Mode	User	Group	Link
JonesEtAl2009	1 598 050	1 620 480	2013-07-30 09:28	0rwxrwsr-x	nsguser	csd179	
batch_command.cmdline	111	512	2013-07-30 09:26	0rwxr--r--	nsguser	csd179	
batch_command.run	1 493	1 536	2013-07-30 09:26	0rw-rw-r--	nsguser	csd179	
batch_command.status	157	512	2013-07-30 09:26	0rw-rw-r--	nsguser	csd179	
COMMANDLINE	87	512	2013-07-30 09:26	0rw-rw-r--		csd179	
inputfile	45 298	45 568	2013-07-30 09:26	0rw-rw-r--		csd179	
inputfile.zip	32 855	33 280	2013-07-30 09:26	0rw-rw-r--	nsguser	csd179	
scheduler.conf	87	512	2013-07-30 09:26	0rw-rw-r--		csd179	
start.txt	45	512	2013-07-30 09:27	0rw-rw-r--	nsguser	csd179	
stderr.txt	376	512	2013-07-30 09:28	0rw-rw-r--	nsguser	csd179	
stdout.txt	67	512	2013-07-30 09:28	0rw-rw-r--	nsguser	csd179	
_JOBINFO.TXT	1 079	1 536	2013-07-30 09:26	0rw-rw-r--		csd179	

1 object(s) selected 1 598 050 1 598 050 2013-07-30 09:28

C:\Users\279user\Downloads\output.tar.gz\output.tar\JonesEtAl2009\

File Edit View Favorites Tools Help

Add Extract Test Copy Move Delete Info

C:\Users\279user\Downloads\output.tar.gz\output.tar\JonesEtAl2009\

Name	Size	Packed Size	Modified	Mode	User	Group	Link
mod_files	12 500	14 336	2013-07-30 09:26	0rwxrwsr-x	nsguser	csd179	
mod_nsgportal	12 500	14 336	2013-07-30 09:26	0rwxrwsr-x	nsguser	csd179	
STATES	11 910	18 432	2013-07-30 09:26	0rwxrwsr-x	nsguser	csd179	
x86_64	684 189	692 224	2013-07-30 09:26	0rwxrwsr-x	nsguser	csd179	
Batch.hoc	6 363	6 656	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
dipole.hoc	2 059	2 560	2012-04-09 17:56	0rwxr-xr-x	nsguser	csd179	
E-FFFBx_fixed_10.hoc	4 143	4 608	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
mosinit.hoc	6 743	7 168	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
MuBurst_10.hoc	4 206	4 608	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
Mu_output.dat	787 670	787 968	2013-07-30 09:28	0rw-rw-r--	nsguser	csd179	
noise2D_V2.hoc	4 094	4 096	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
out.dat	8 939	9 216	2013-07-30 09:28	0rw-rw-r--	nsguser	csd179	
parlib.hoc	3 424	3 584	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
readme.txt	4 202	4 608	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
scale_ep_thresh.hoc	1 012	1 024	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
sj10-cortex.hoc	17 573	17 920	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
wiring-SmlFeed-3_7.hoc	1 108	1 536	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	
wiring_proc_2Dv2.hoc	25 415	25 600	2012-04-09 17:56	0rw-r--r--	nsguser	csd179	

0 object(s) selected

Please contact nsghelp@sdsc.edu for any questions on usage.