DISCLAIMER: More detailed information on the results and/or performance obtained and their use is available in the Subproject's subsequent Deliverable (D6.7.4) and/or Periodic Report.

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Abstract:	The prototype, which is available for use by members of the HBP Consortium, comprises alpha releases of all the key components of the Platform, including the brain builder, the simulators and first draft models of major regions of the mouse brain.
Keywords:	Platform, App, Collab, Internal Release, Brain Simulation, Brain Building

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1. The Aim of this Document

This document provides the information needed to access the Brain Simulation Platform v1 - preliminary release for internal Consortium use (Deliverable D6.7.3, Milestone 124).

The documentation on the features in the system currently available is available at web locations specified in links below.

2. How to Access the HBP Brain Simulation Platform

The Brain Simulation Platform v1 is accessed via the HBP Collaboratory.

The HBP Collaboratory URL is:
https://collab.humanbrainproject.eu/#/collab/161/nav/1389

The Brain Simulation Platform Collaboratory URL is:
https://collab.humanbrainproject.eu/#/collab/161/nav/1389

3. HBP Identity Service login

The HBP Collaboratory uses the HBP Identity Service to log in. To get an HBP Identity Service account, please register for an account at:

https://services.humanbrainproject.eu/oidc/account/request.

You will be required to enter the following information:

- First name
- Last name
- An institutional email address
- Birth date
- Gender
- Subproject of your primary HBP contribution
- Institution – Only HBP Consortium members are currently on this list. If your home institution does not appear on the list, please contact support at hbp-platform-support@groupes.epfl.ch.

4. Access to HBP HPC platform

Many of the functionalities provided by the Brain simulation platform require an access to the HPC platform:

For web accessible services and application, you will in most case need to provide a “HPC project” to run a job. You will also need to be granted access to the HPC projects where the data are located:

https://collab.humanbrainproject.eu/#/collab/264/nav/3304

For gnu-modules, you will need to login (through SSH for instance) to the HPC facility, and load the gnu-modules in order to access the software:

https://collab.humanbrainproject.eu/#/collab/161/nav/3171

5. Platform User Instructions

A screenshot of the Brain Simulation Platform homepage is shown in Annex 2.

The guidebook for the internal release can be found via: Brain Simulation Platform>Platform Functionality>Internal Release V1".

6. Help and User Feedback

For user help, please contact: bsp-support@humanbrainproject.eu.

To provide user feedback, please contact: bsp-support@humanbrainproject.eu.

Alternatively, users can use the chat function in the Brain Simulation Platform directly, as shown in Figure 3 (see Annex 2).

7. Annexes

1) Tools & Features Available in this Platform Release
2) Screenshots of Tools & Features Available in this Platform Release

Annex 1: Tools & Functions Available in this Platform Release

Milestone	Milestone Description	Responsible	Tool/Function	Available at *	Keywords
MS111	Software application to fit ion channel densities to reproduce any target electrophysiology, v1	WP6.1 Henry MARKRAM	• OptimizerFramework	https://collab.humanbrainproject.eu/#/collab/161/nav/2997 as gnu-module (not open source)	Tool; electrophysiology
			• Electrophysiology Feature Extraction Library	https://collab.humanbrainproject.eu/#/collab/161/nav/2996 as open source software	Tool; electrophysiology
			• ModelManagement	https://collab.humanbrainproject.eu/#/collab/161/nav/2998 as gnu-module (not open source)	Tool; electrophysiology
MS112	Software to synthesise cellular morphologies, including projecting axons, v1	WP6.1 Henry MARKRAM	• Morphology utility toolkit	https://collab.humanbrainproject.eu/#/collab/161/nav/3001 as gnu-module (not open source)	Library; morphology
			• Morphology repair	https://collab.humanbrainproject.eu/#/collab/161/nav/3002 as gnu-module (not open source)	Library; morphology
			• Blue repair SDK	https://collab.humanbrainproject.eu/#/collab/161/nav/3003 as gnu-module (not open source)	Library; morphology
			• Axon splicing	https://collab.humanbrainproject.eu/#/collab/161/nav/3004 as gnu-module (not open source)	Library; morphology
			• NeuronM	https://collab.humanbrainproject.eu/#/collab/161/nav/3000 as open source software	Library; morphology; analysis
MS113	Multi-scale cellular simulator (with a range of neuron models from point neurons to detailed neurons) v1	WP6.2 Felix SCHÜRMANN	• CoreNeuron	https://collab.humanbrainproject.eu/#/collab/161/nav/2991 as gnu-module	Simulation

MS114	Network Simulator	WP6.2	• NEST	https://collab.humanbrainproject.eu/#/collab/161/nav/2988 as open source software	Simulation
MS116	Drug binding affinities	WP6.3	• publication	http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0135998	Initial Model
MS117	Protein-protein and ligand-protein interactions	WP6.3	• SDA	http://mcm.h-its.org/webSDA as web application	Simulator
MS119	First draft model of somatosensory cortex	WP6.4 Jeanette HELLGREN-KOTALESKI	• Draft point neuron model	Package on HBP Development Computer filesystem	Initial Model
MS120	Advanced methods for automated cellular-level modelling of neurons	WP6.4 Jeanette HELLGREN-KOTALESKI	• OptimizerFramework	https://collab.humanbrainproject.eu/#/collab/161/nav/2997 as open source software	Tool; electrophysiology

MS121	Hippocampus CA1	WP6.4 Jeanette HELLGREN-KOTALESKI	• Publication	https://forum.humanbrainproject.eu/t/first-draft-model-of-hippocampus-ca1-microcircuit/86	Initial Model
MS124	Brain Simulation Platform v1 ready for internal release	WP6.5 Felix SCHÜRMANN	• Brain builder (Function no. 6.1.1.1)	Due November 2015	
			• Validations (Function no. 6.1.1.2)	https://collab.humanbrainproject.eu/#/collab/161/nav/3006 as gnu-module (not open source)	Library; validation
			• Compound model and model component analysis (Function no. 6.1.1.3)	Mosaic analysis task https://collab.humanbrainproject.eu/#/collab/161/nav/3048 as webservice https://collab.humanbrainproject.eu/#/collab/161/nav/3164 as webservice	Task; analysis
				Layer analysis task https://collab.humanbrainproject.eu/#/collab/161/nav/3047 as webservice https://collab.humanbrainproject.eu/#/collab/161/nav/3164 as webservice	Task; analysis
				Morphology collage task https://collab.humanbrainproject.eu/#/collab/161/nav/3046 as web service https://collab.humanbrainproject.eu/#/collab/161/nav/3164 as web service	Task; analysis
				Bluepy circuit analysis library https://collab.humanbrainproject.eu/#/collab/161/nav/2986 as gnu-module	Library; analysis

			• Simulation analysis tools (Function no. 6.1.1.4)	Post Simulation Analysis Workflow https://collab.humanbrainproject.eu/#/collab/161/nav/2983 as gnu-module	Tool; analysis
				Bluepy simulation analysis library https://collab.humanbrainproject.eu/#/collab/161/nav/2986 as gnu-module	Library; analysis
			• Collaborative review process (Function no. 6.1.1.5)	Circuit viewer https://collab.humanbrainproject.eu/#/collab/161/nav/3178 as web application	Viewer; circuit
				Simulation configuration viewer https://collab.humanbrainproject.eu/#/collab/161/nav/3179 as web application	Viewer; simulation
				Circuit validation reports: https://collab.humanbrainproject.eu/#/collab/327/nav/3169 as web application https://collab.humanbrainproject.eu/#/collab/327/nav/3170 as web application	Viewer; validation
				Simulation analysis report https://collab.humanbrainproject.eu/#/collab/327/nav/3232 as web application	Viewer; simulation; analysis

			• Simulation configure and launch (Function no. 6.1.5.1)	Cortical microcircuit simulation https://collab.humanbrainproject.eu/#/collab/161/nav/3086 as web service	Task; simulation
				Brunel network simulation https://collab.humanbrainproject.eu/#/collab/161/nav/3087 as web-service	Task; simulation
				Tsodyks synapse simulation https://collab.humanbrainproject.eu/#/collab/161/nav/3088 as web-service	Task; simulation
				Single neuron simulation https://collab.humanbrainproject.eu/#/collab/161/nav/3107 as web-service	Task; simulation
MS124	Brain Simulation Platform v1 ready for internal release – initial models	WP6.4 Jeanette HELLGREN-KOTALESKI	• Neocortical Neuron Models • Neocortical Microcircuit Model	https://collab.humanbrainproject.eu/#/collab/161/nav/3183	Initial Models
MS128	Guidebook for the use of the Brain Simulation Platform – initial release	WP6.6 Felix SCHÜRMANN	• Introduction guidebook	https://collab.humanbrainproject.eu/#/collab/161/nav/3162	Guidebook; support; overview; example

* "as open source software": available as a open source software

" as gnu-module" : installed and accessible on the HPC facility as a GNU module.

"as web-service": accessible through a REST API or through a generated GUI in the collaboratory

"as web-application": accessible through a GUI in the collaboratory

Annex 2: Screenshots of Tools & Features Available in this Platform Release

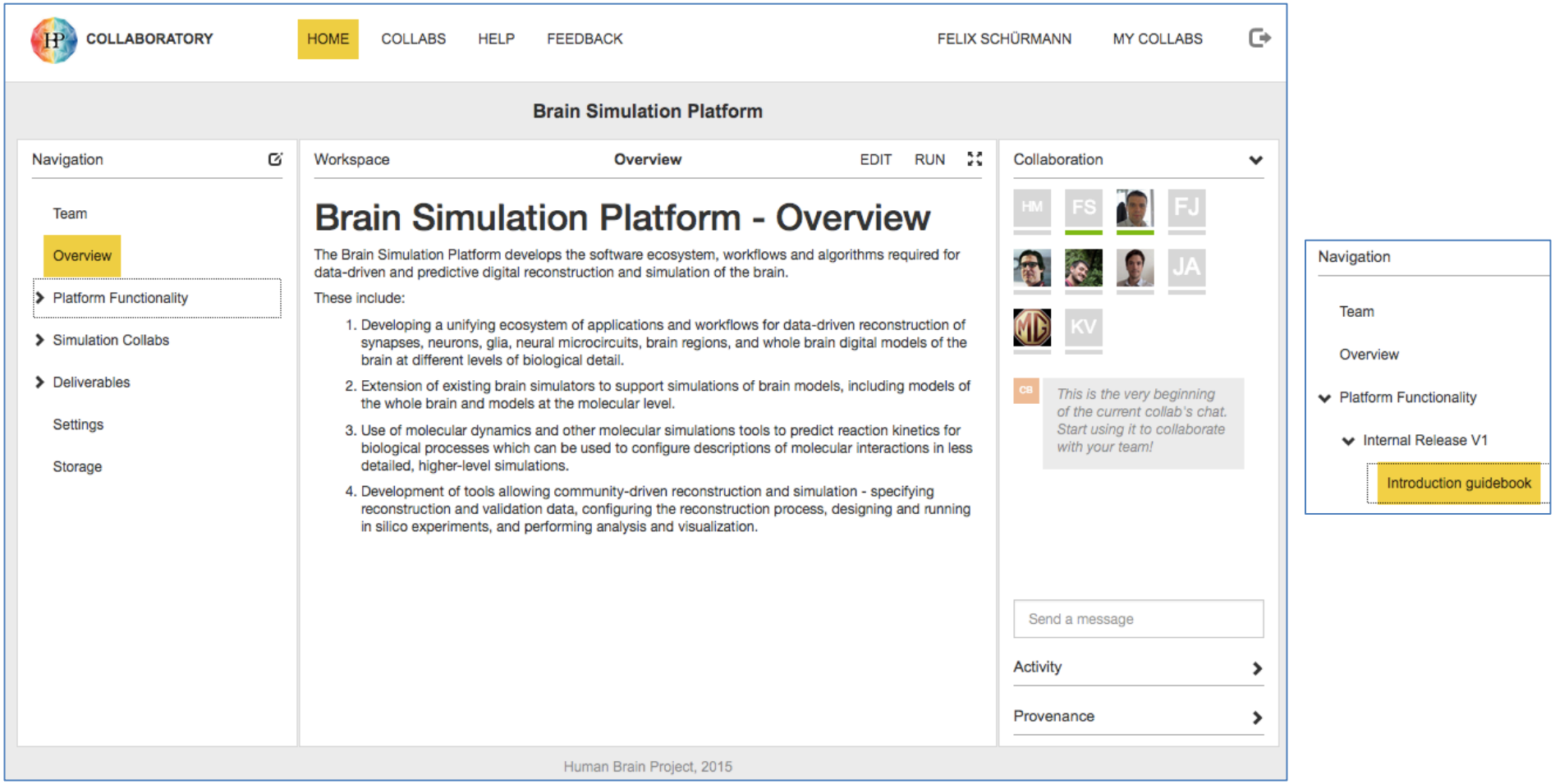

Figure 1: Screenshot of the Brain Simulation Platform Homepage (left), and navigation to Guidebook (right)

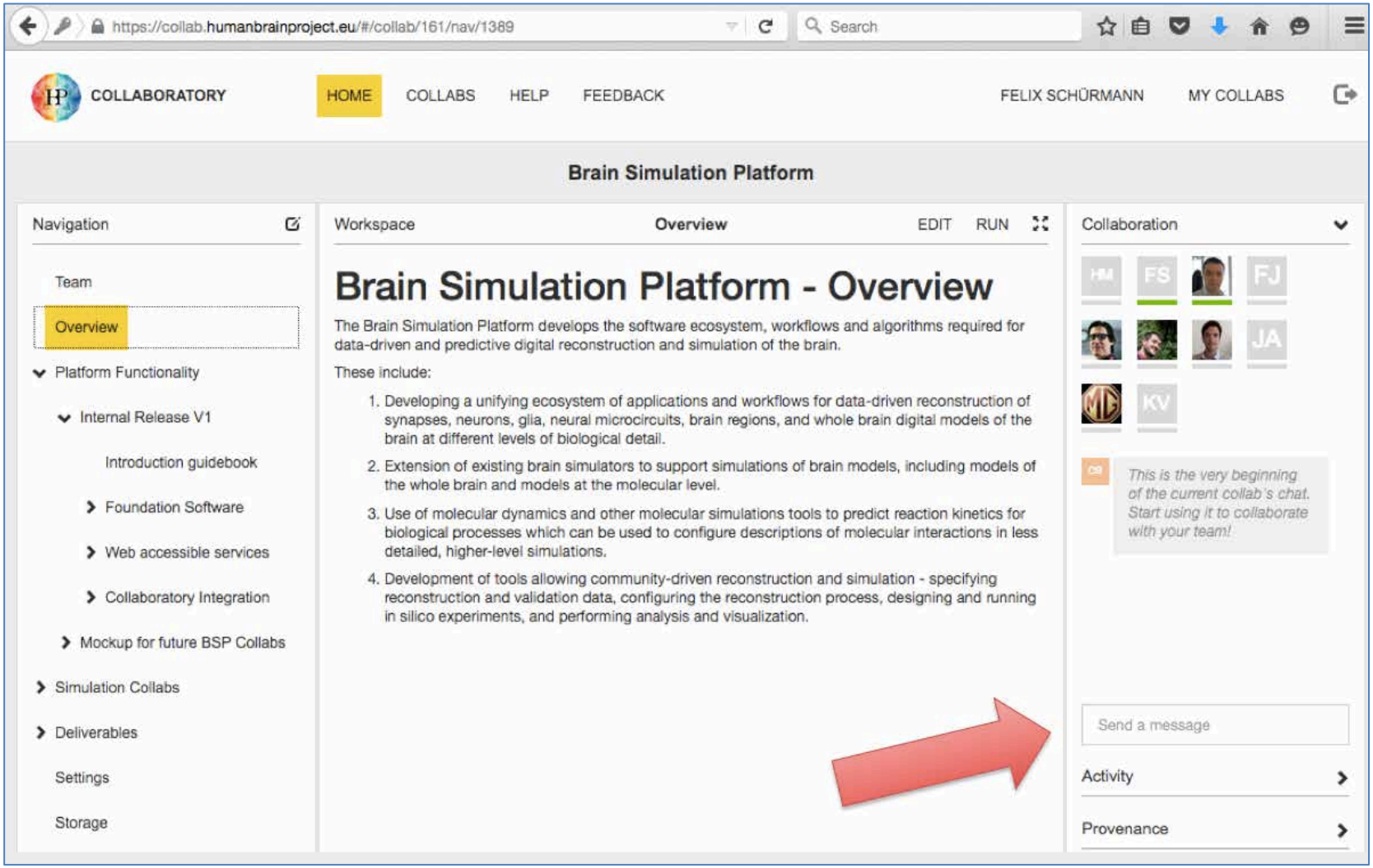

Figure 2: Brain Simulation Platform with Chat Function Highlighted

Circuit viewer app

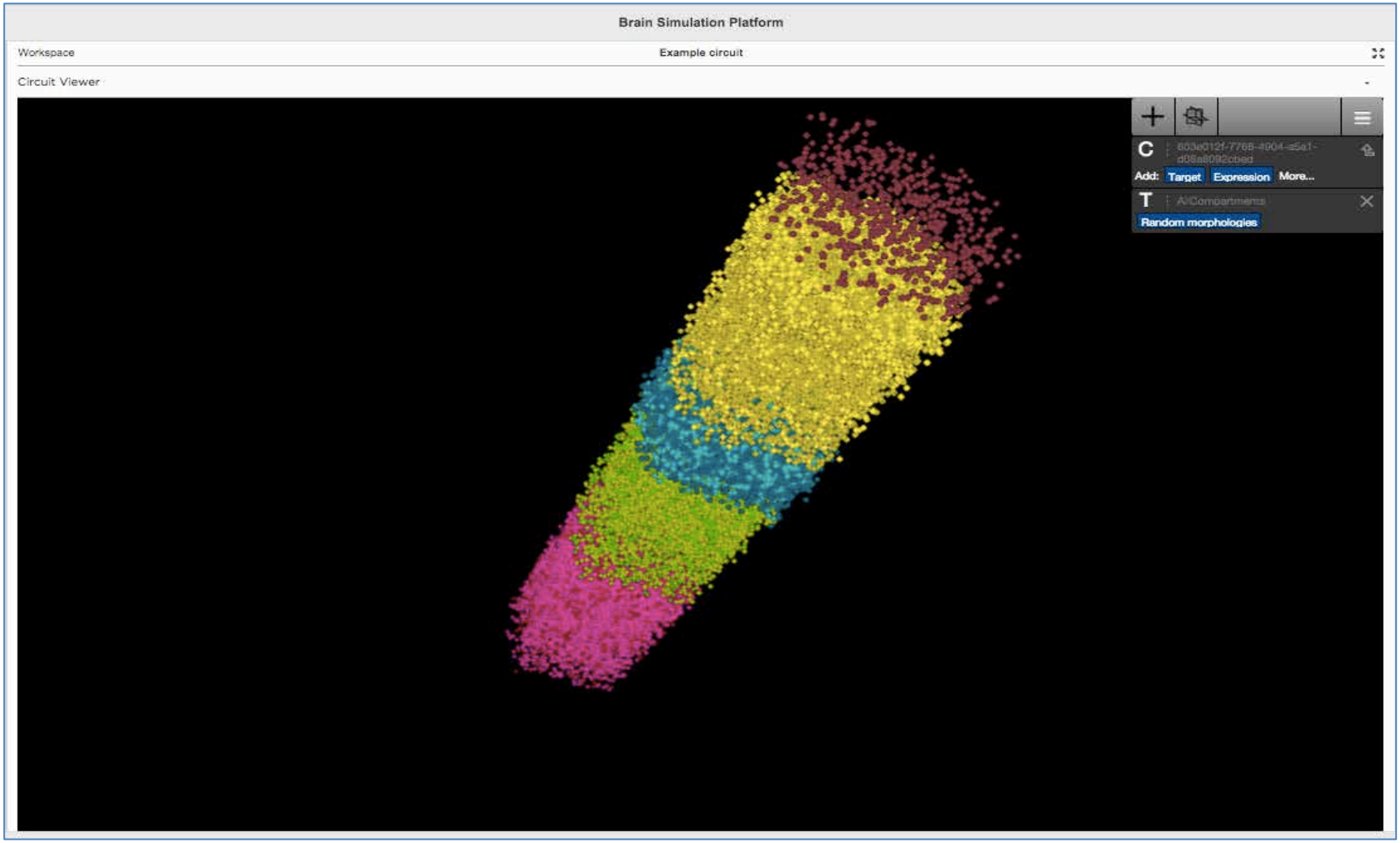

Figure 3: Screenshot of the Circuit Viewer App

Simulation Viewer app

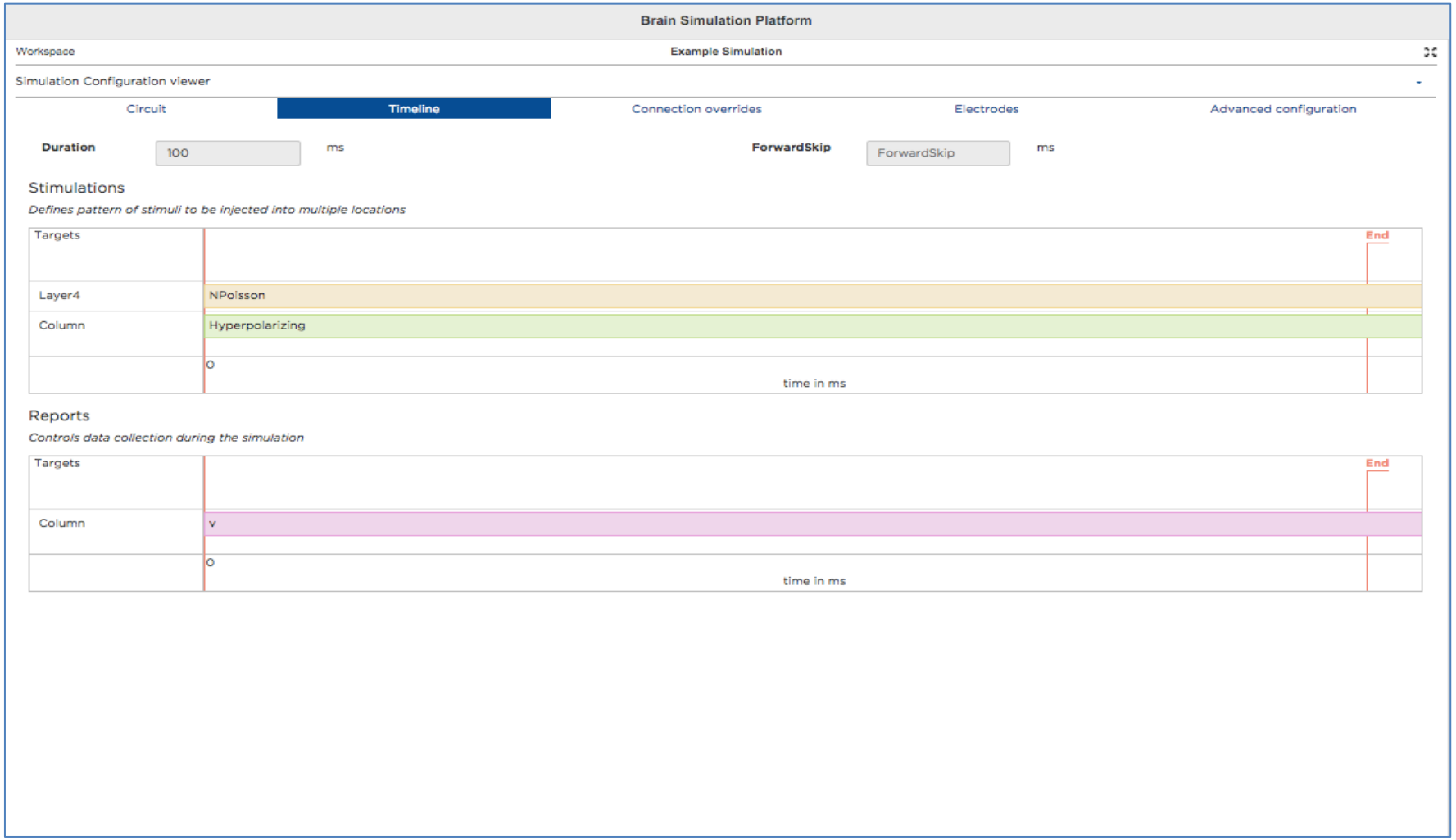

Figure 4: Screenshot of the Simulation Viewer App

Analysis report viewer app

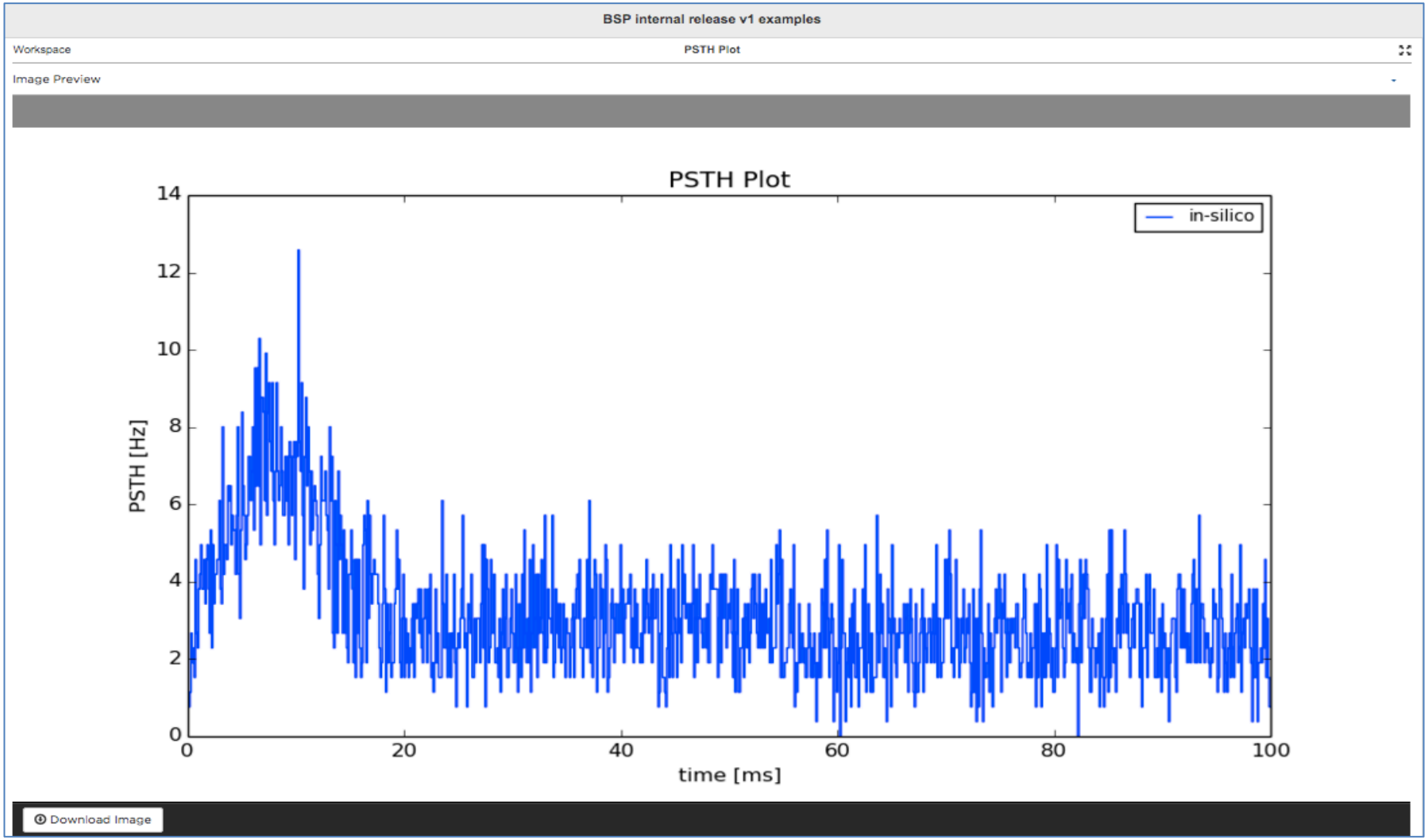

Figure 5: Screenshot of the Analysis Report Viewer App

Validation report viewer app

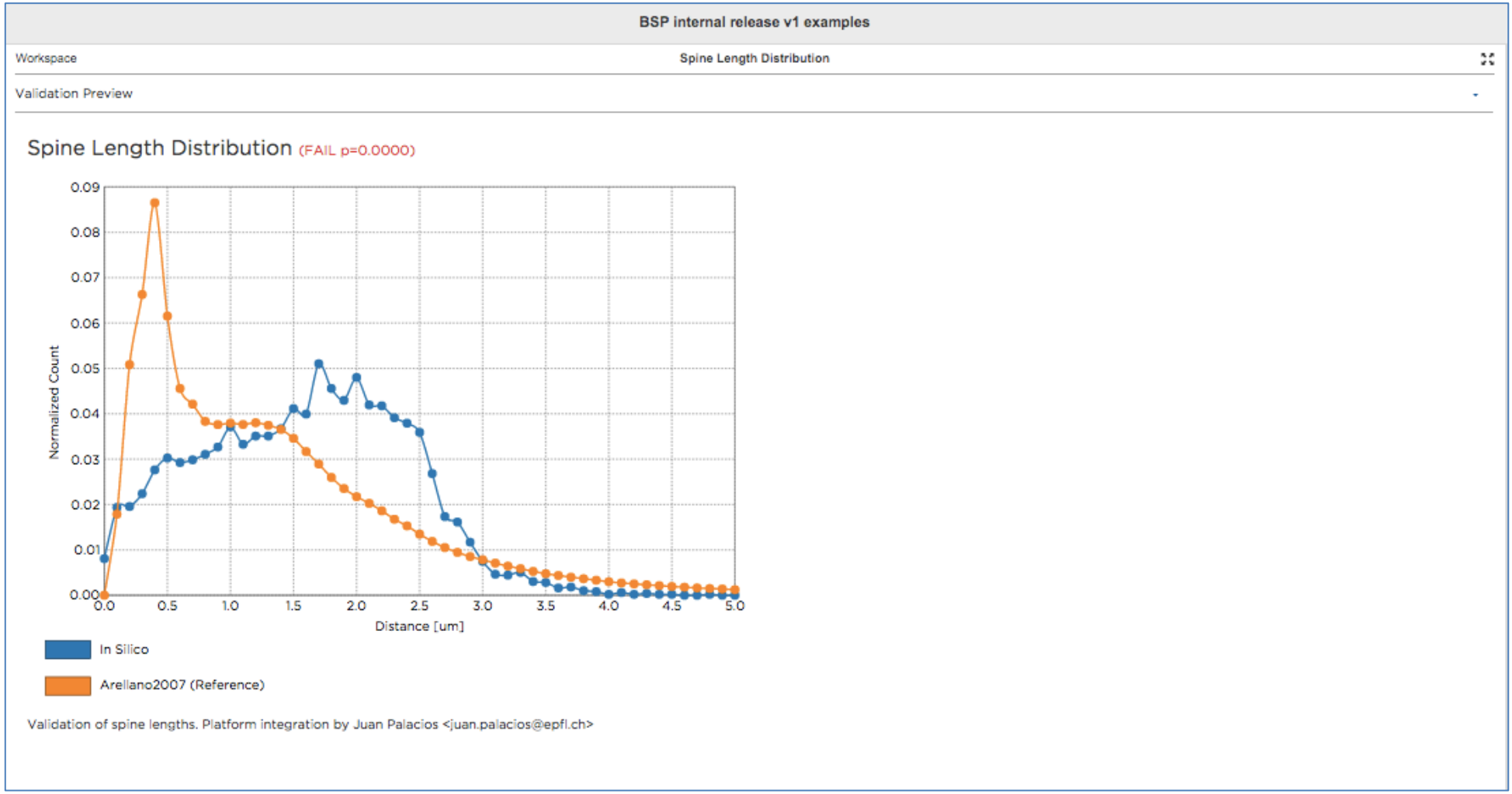

Figure 6: Screenshot of the Validation Report Viewer App

Cortical microcircuit simulation app

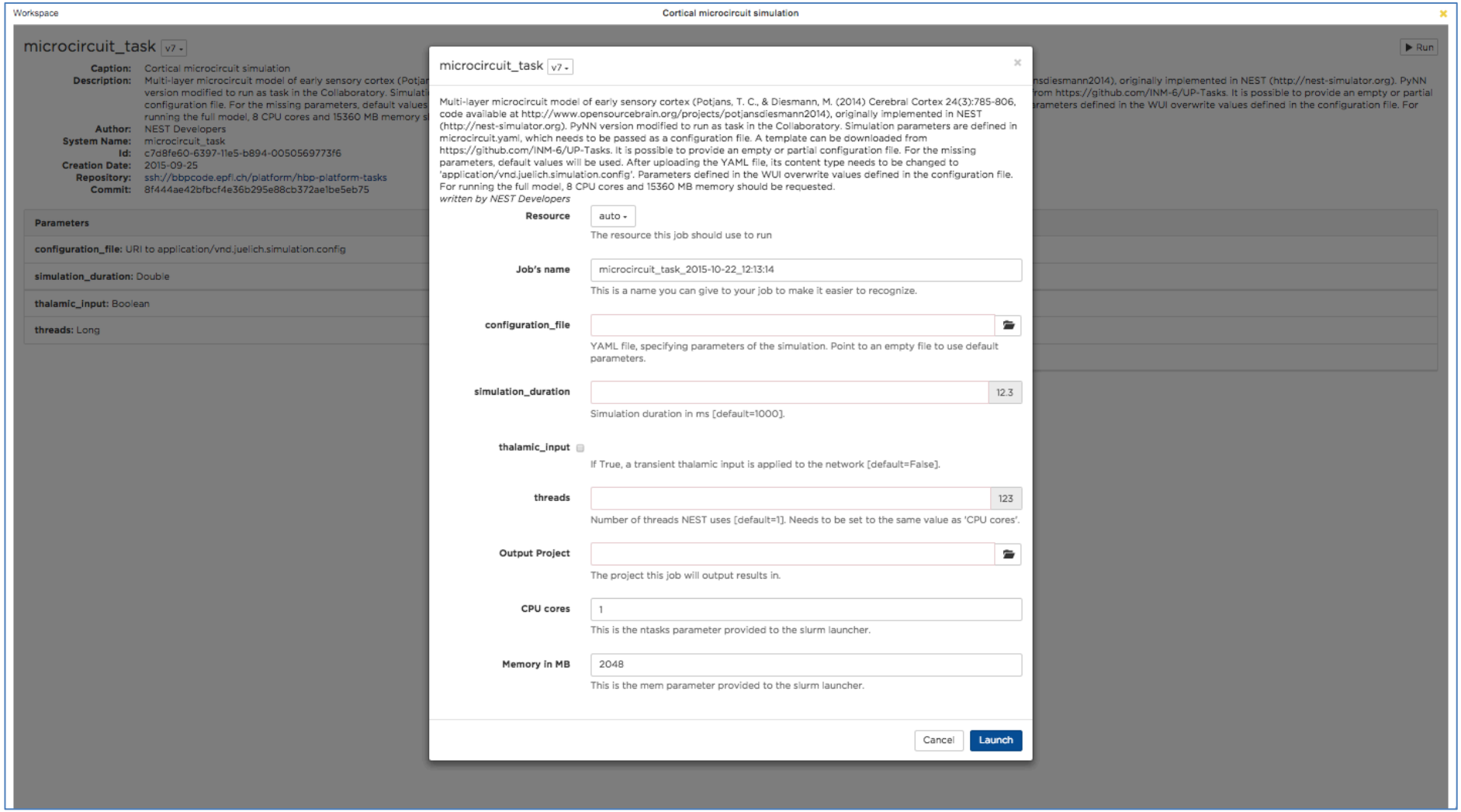

Figure 7: Screenshot of the Cortical Microcircuit Simulation App

Brunel network simulation app

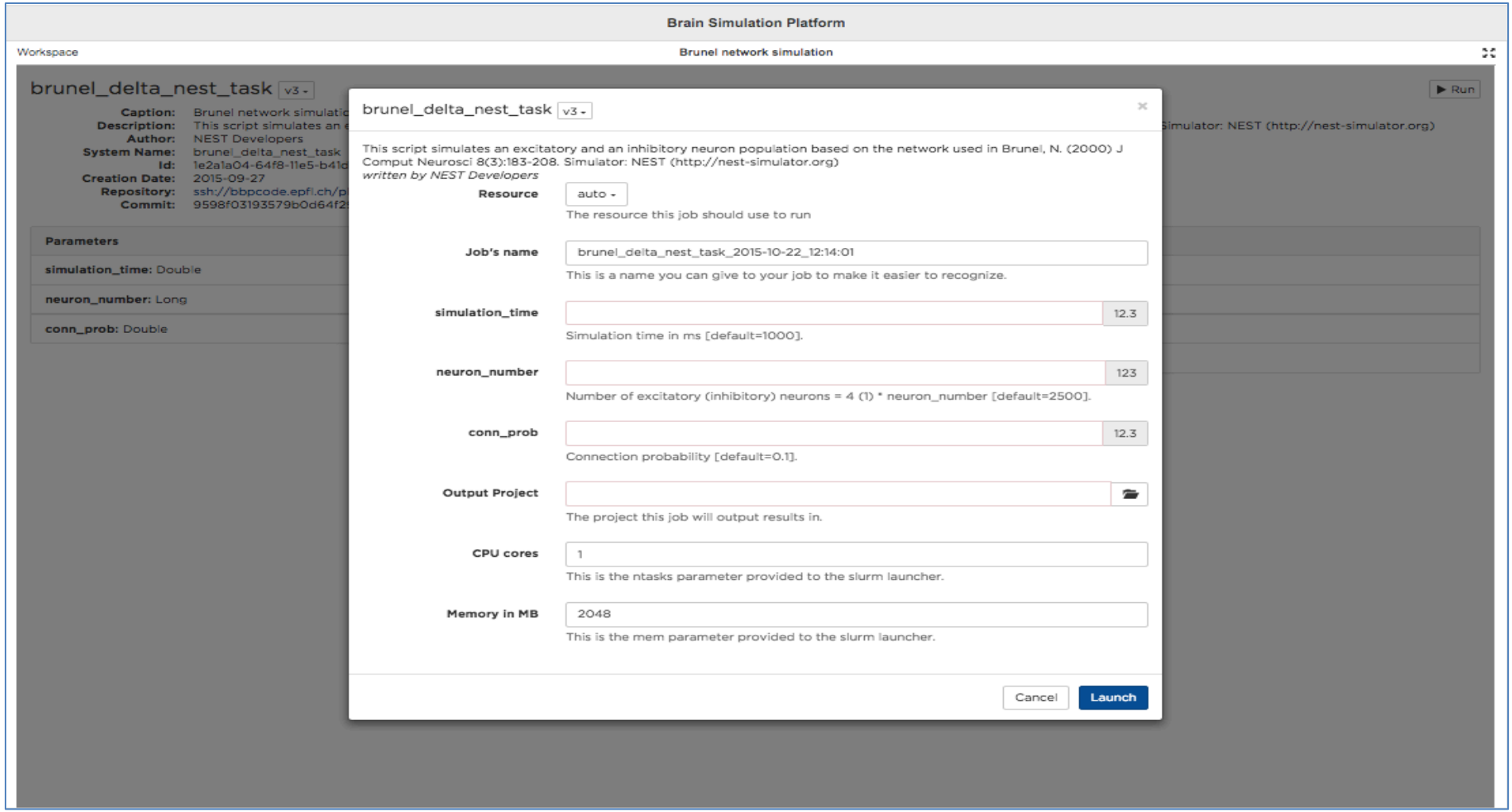

Figure 8: Screenshot of the Brunel Network Simulation App

Tsodyks synapse simulation app

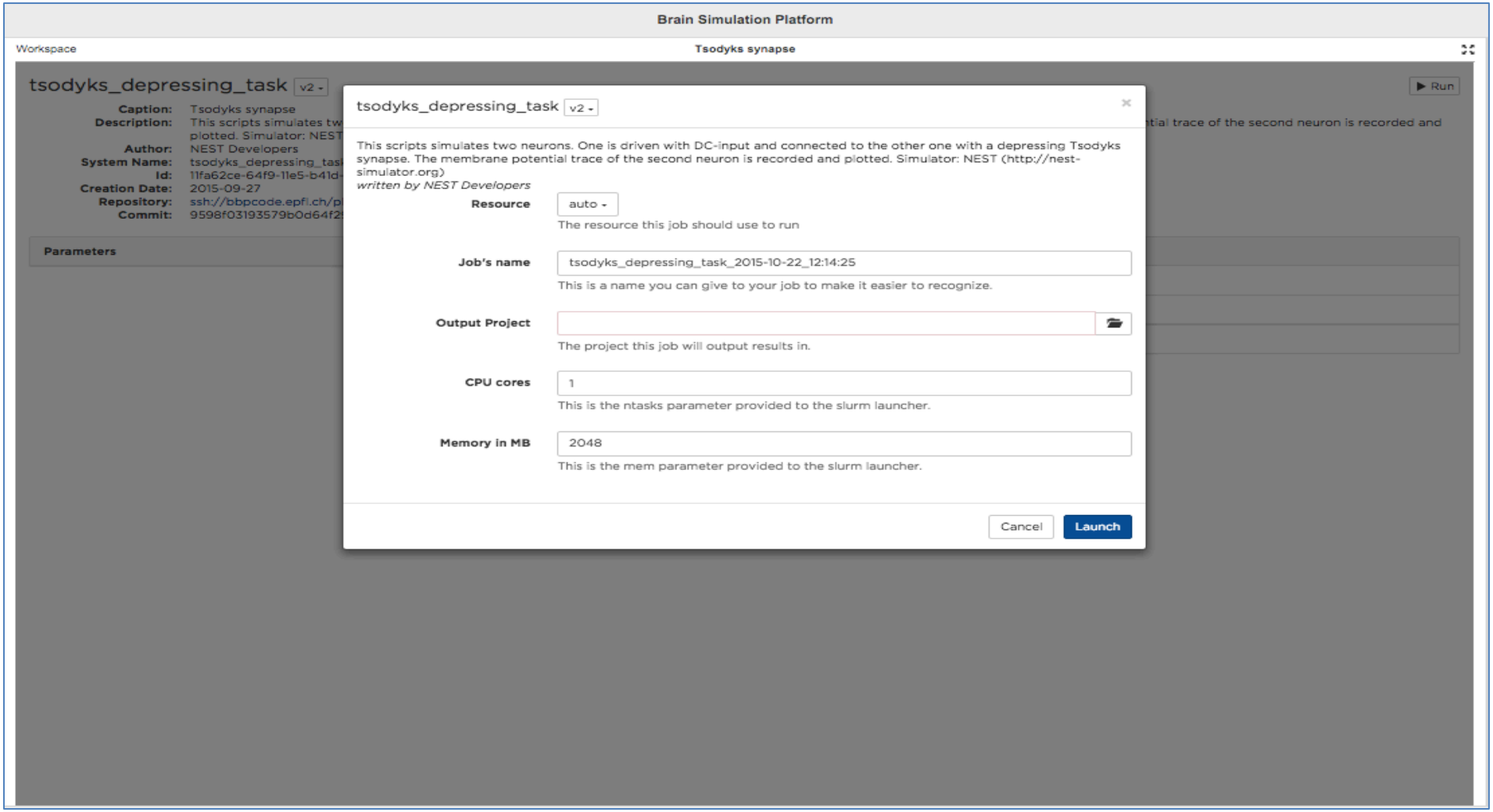

Figure 9: Screenshot of the Tsodyks Synaps Simulation App

Single neuron simulation app

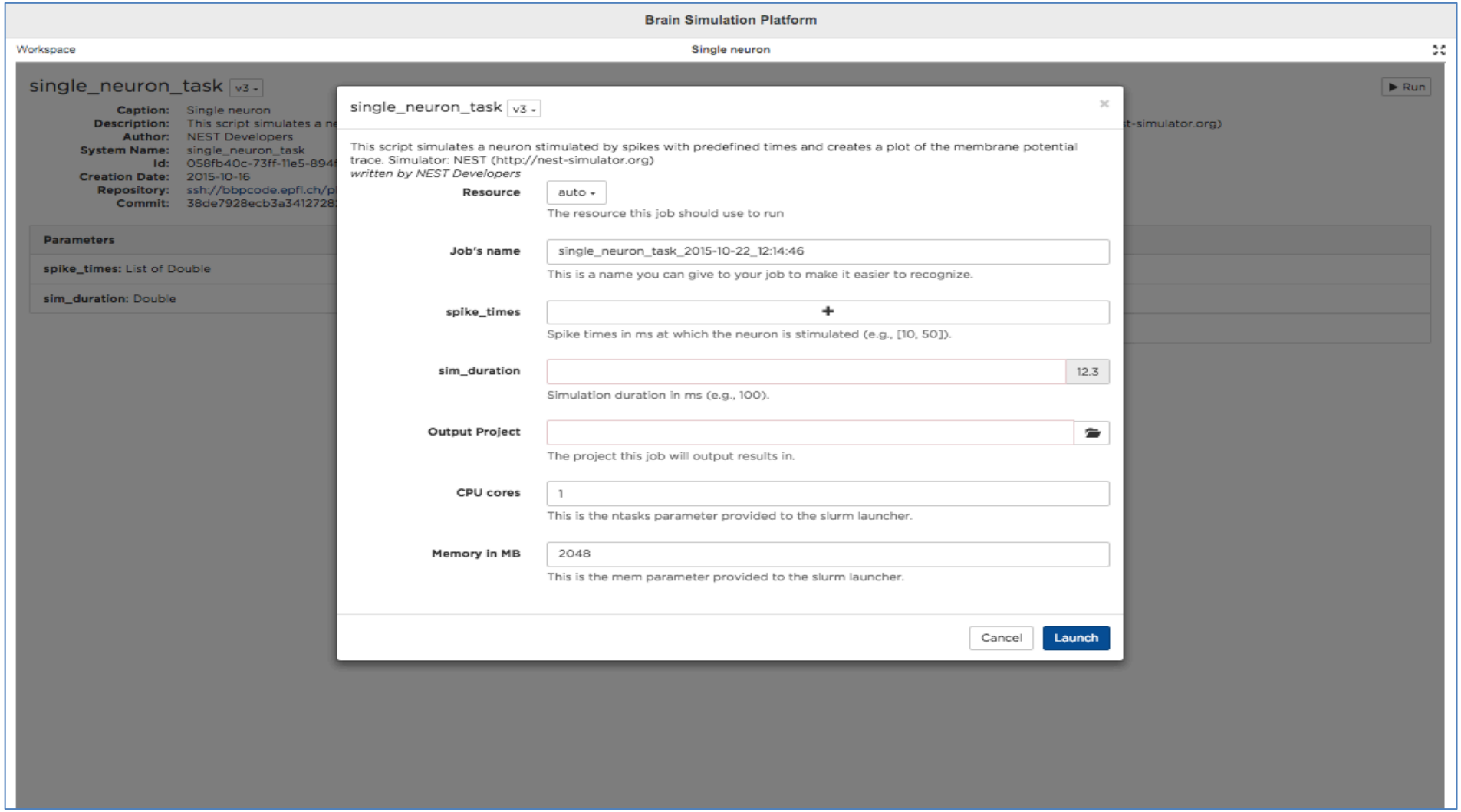

Figure 10: Screenshot of the Single Neuron Simulation App

Circuit mosaic plot analysis app

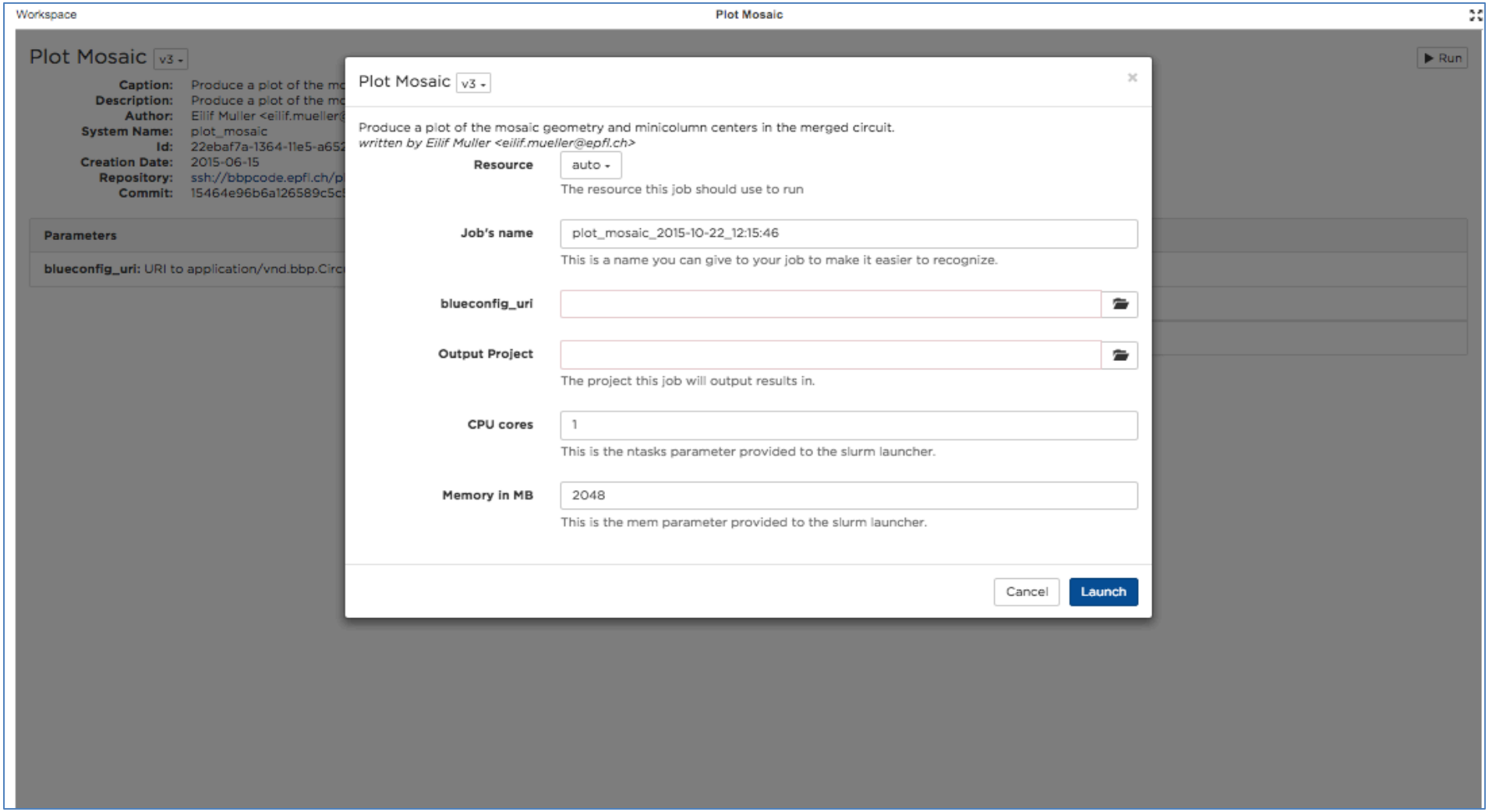

Figure 11: Screenshot of the Mosaic Plot Analysis App

Circuit layer plot analysis app

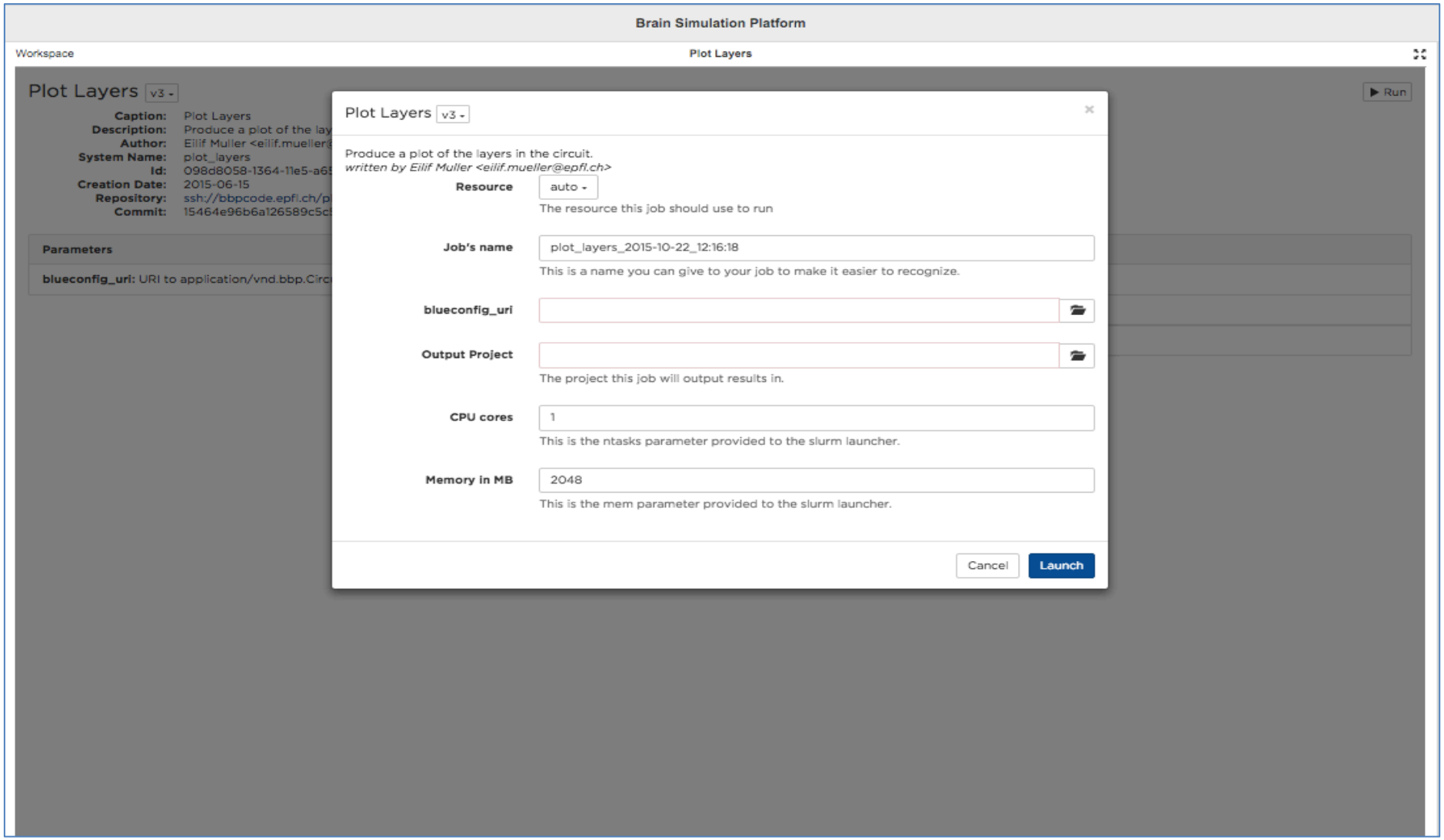

Figure 12: Screenshot of the Circuit Layer Plot Analysis App

Circuit morphology collage analysis app

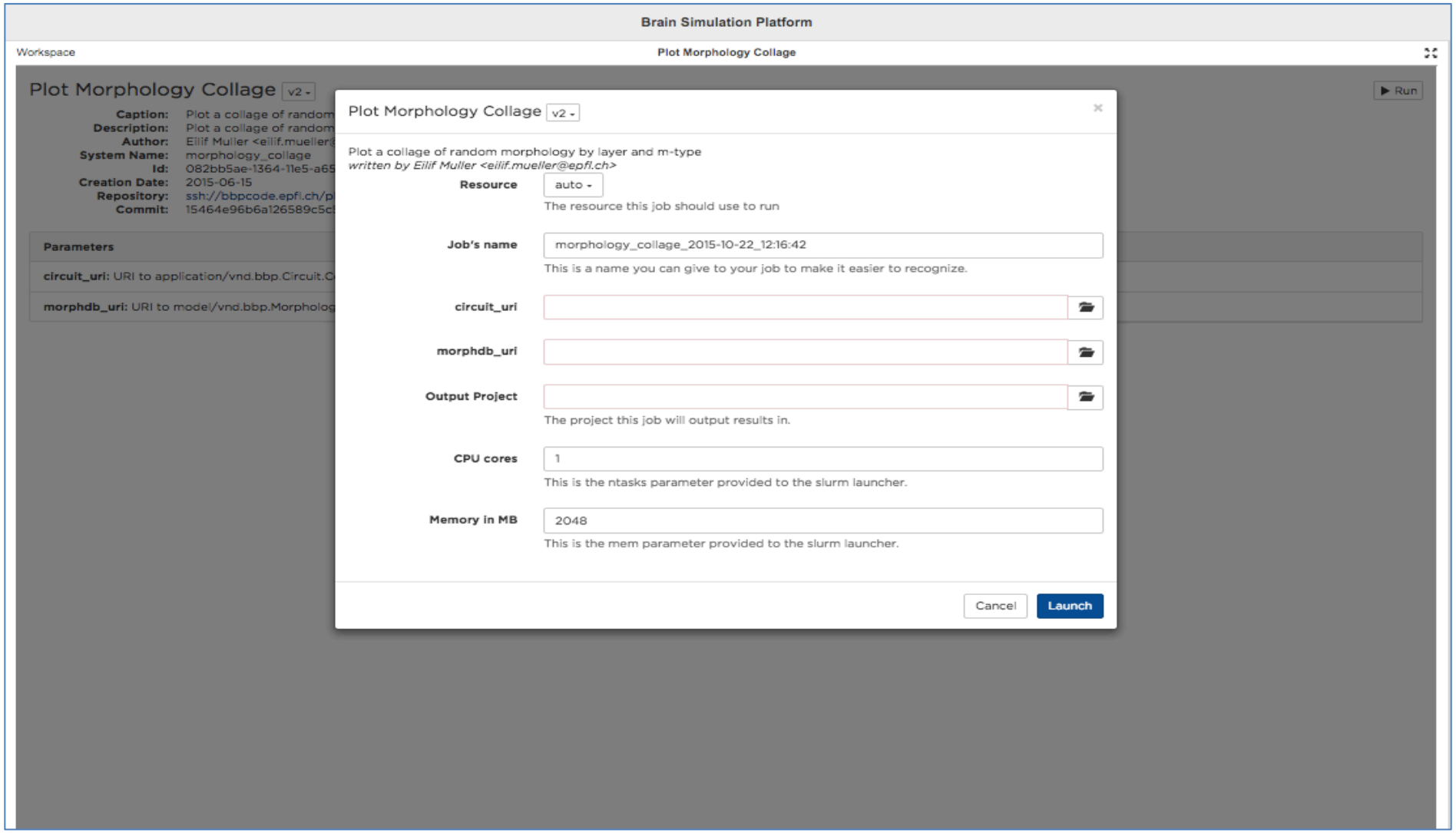

Figure 13: Screenshot of the Circuit Morphology Collage Analysis App

PSTH plot analysis app

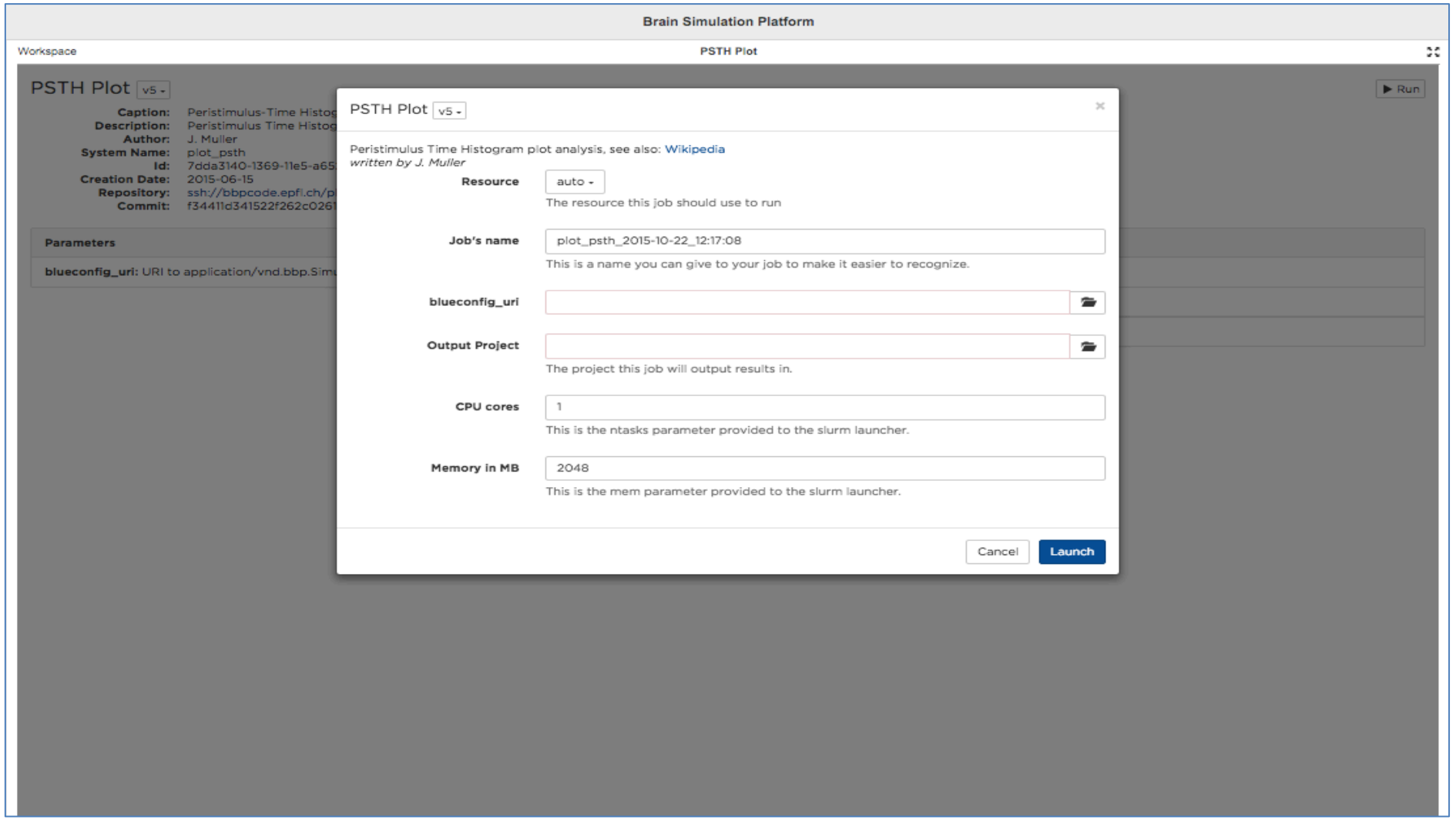

Figure 14: Screenshot of the PSTH Plot Analysis App

Spike raster plot analysis app

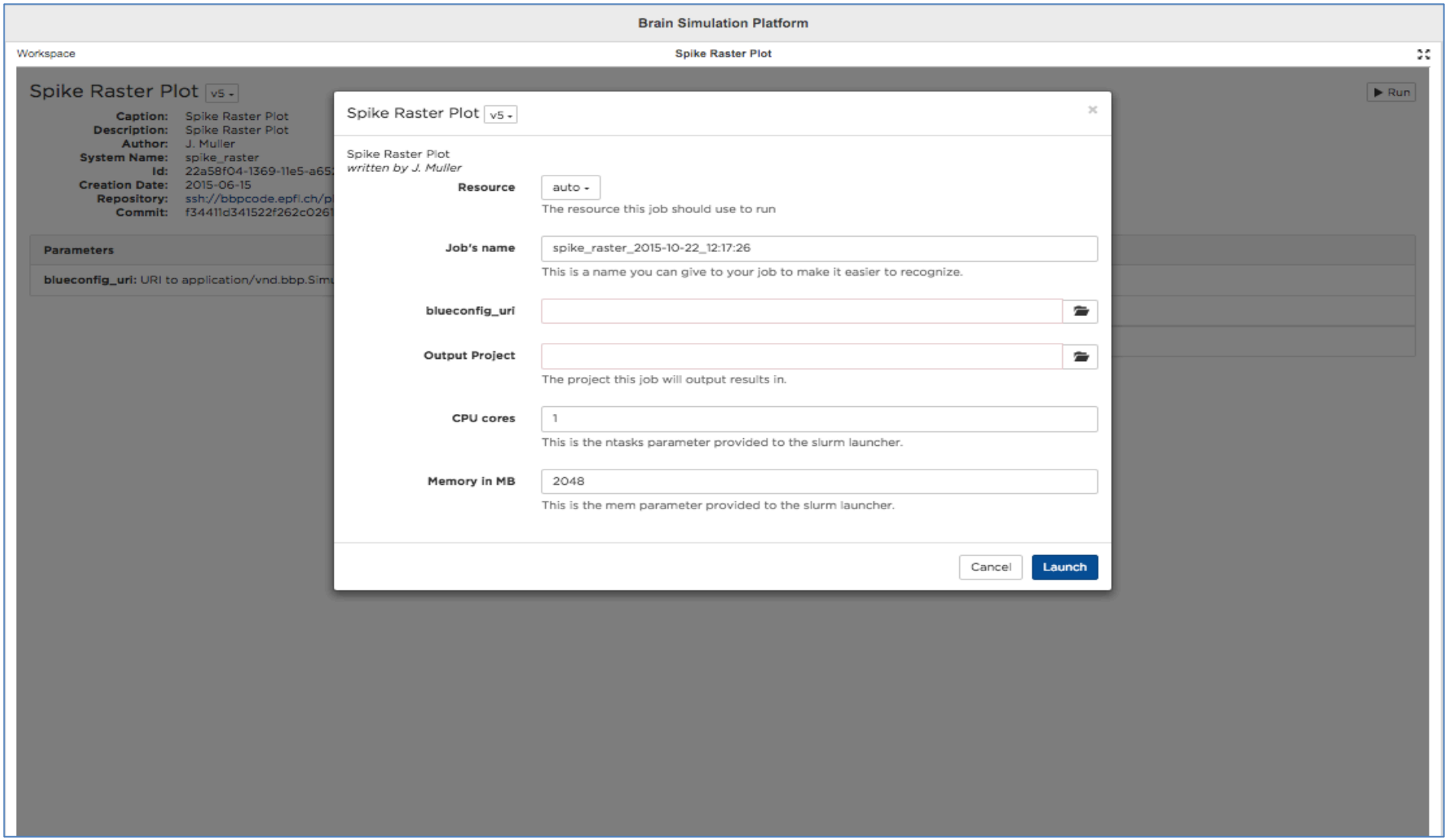

Figure 15: Screenshot of the Raster Plot Analysis App

Simulation voltage collage analysis app

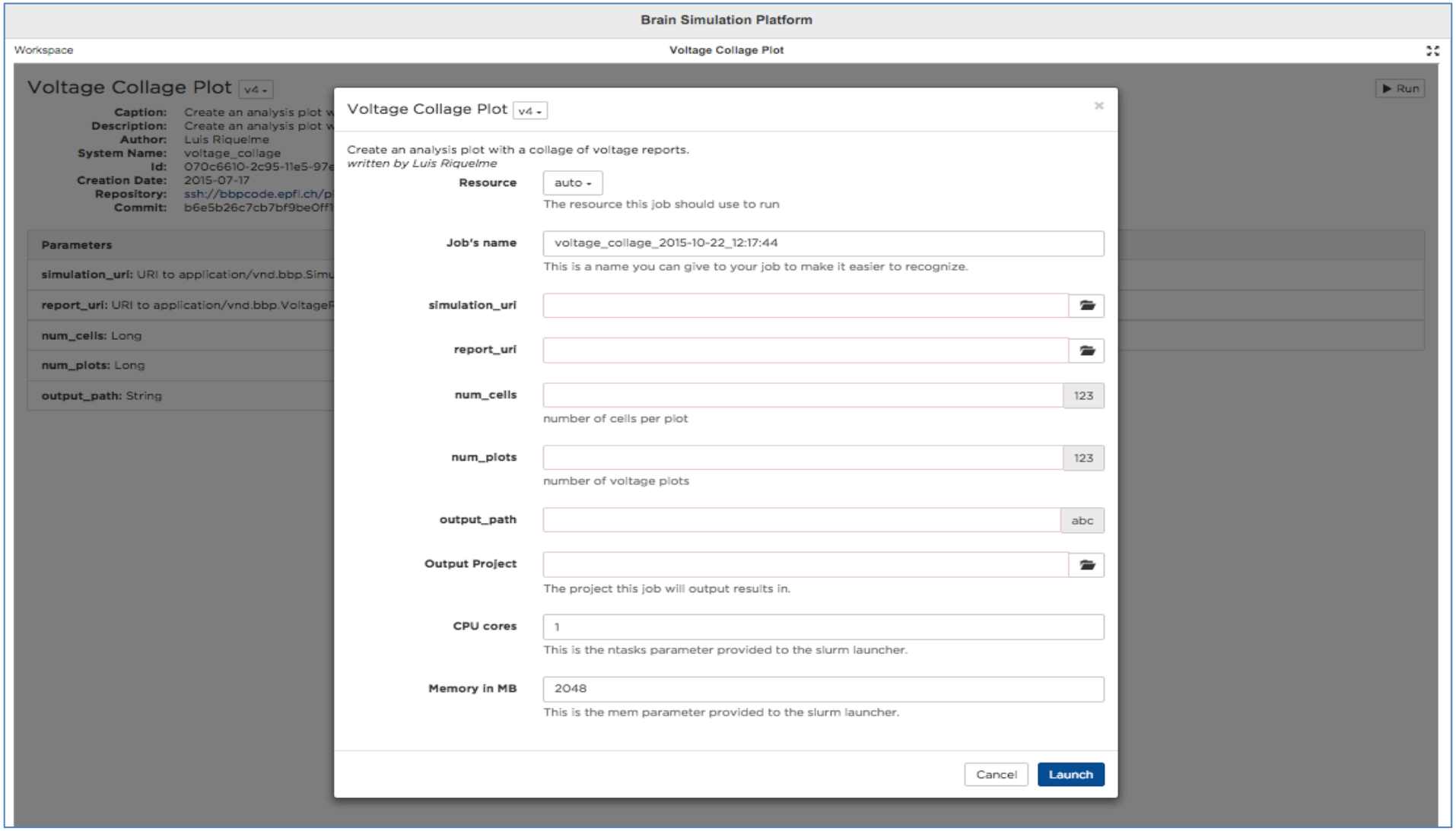

Figure 16: Screenshot of the Simulation Voltage Collage Analysis App

Circuit cell density per layer validation app

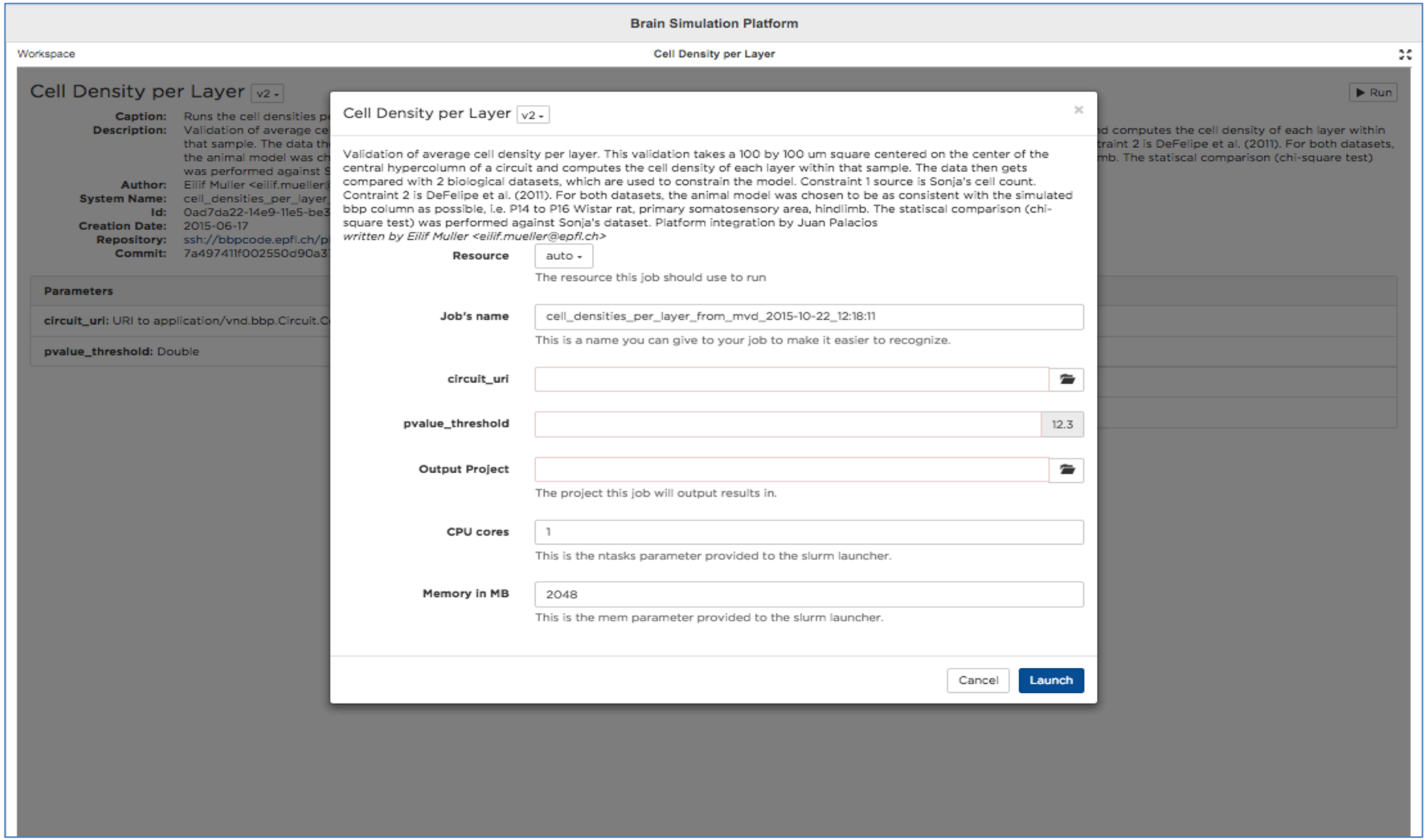

Figure 17: Screenshot of the Circuit Cell Density per Layer Validation App

Inhibitory synapses density circuit validation app

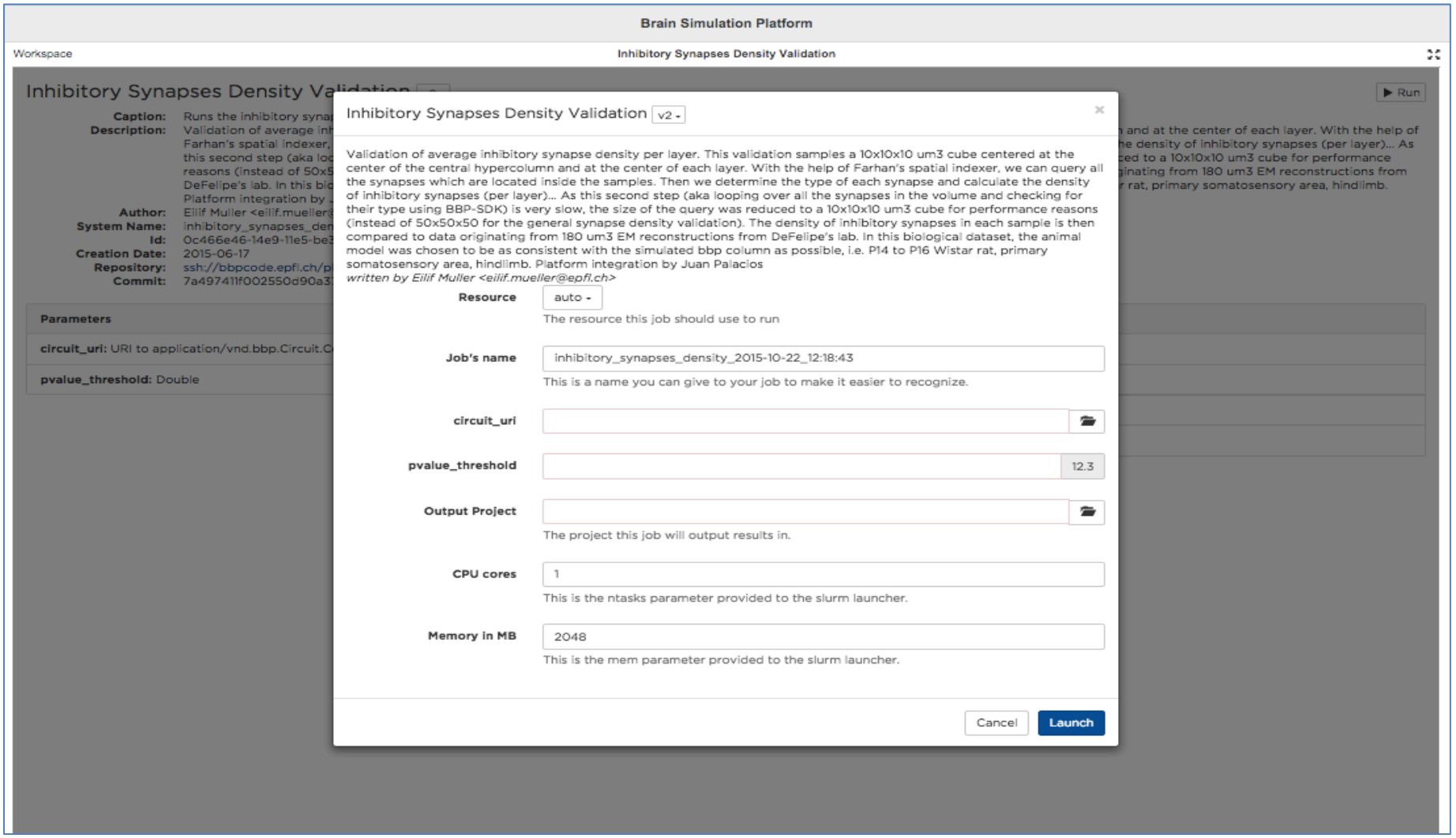

Figure 18: Screenshot of the Inhibitory Synapses Density Circuit App

Circuit GABAergic cells fractions per layer circuit validation app

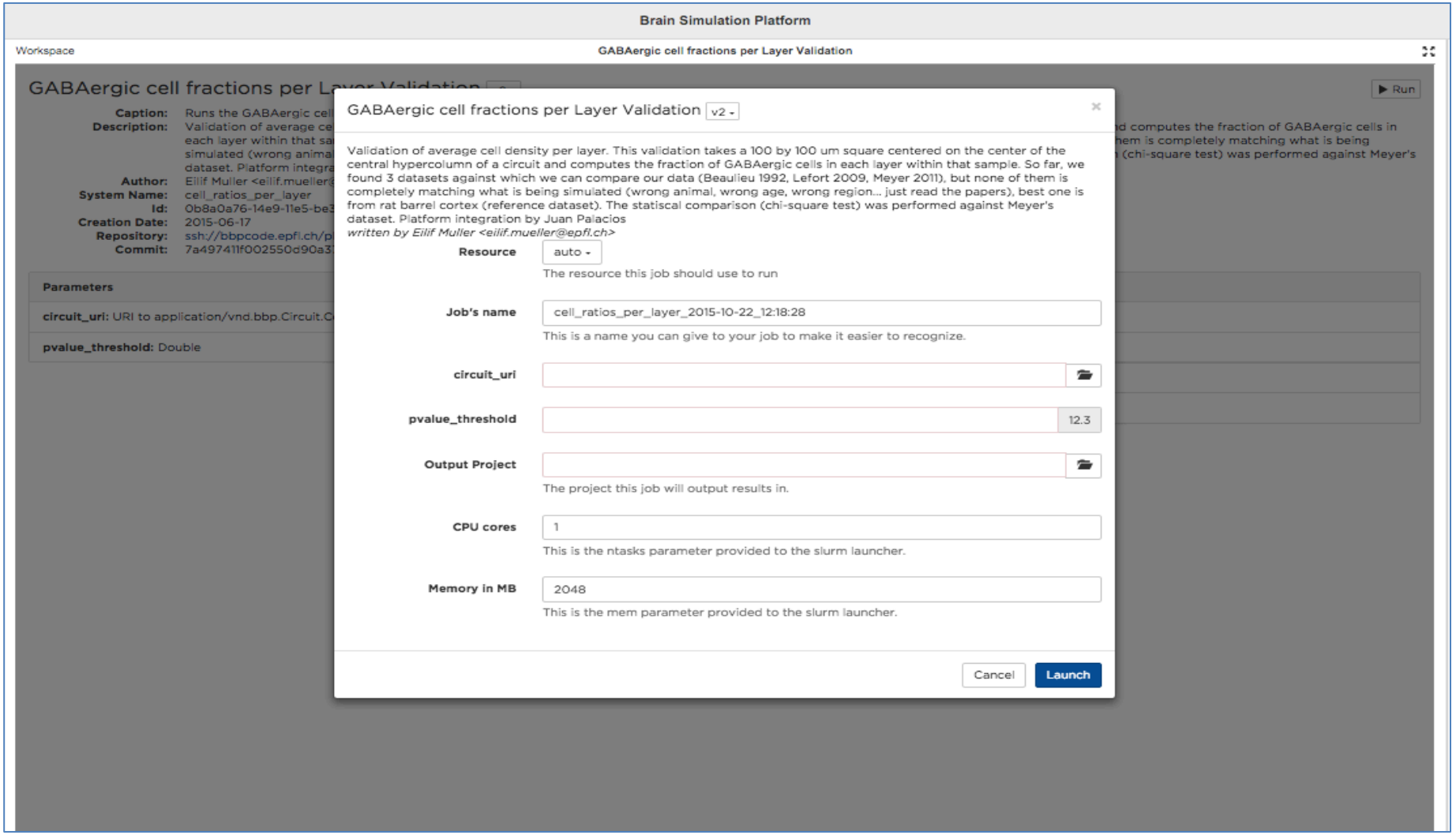

Figure 19: Screenshot of the Circuit GABAergic Cells Fractions Per Layer Circuit Validation App

Intrinsic inhibitory synapses density per layer circuit validation app

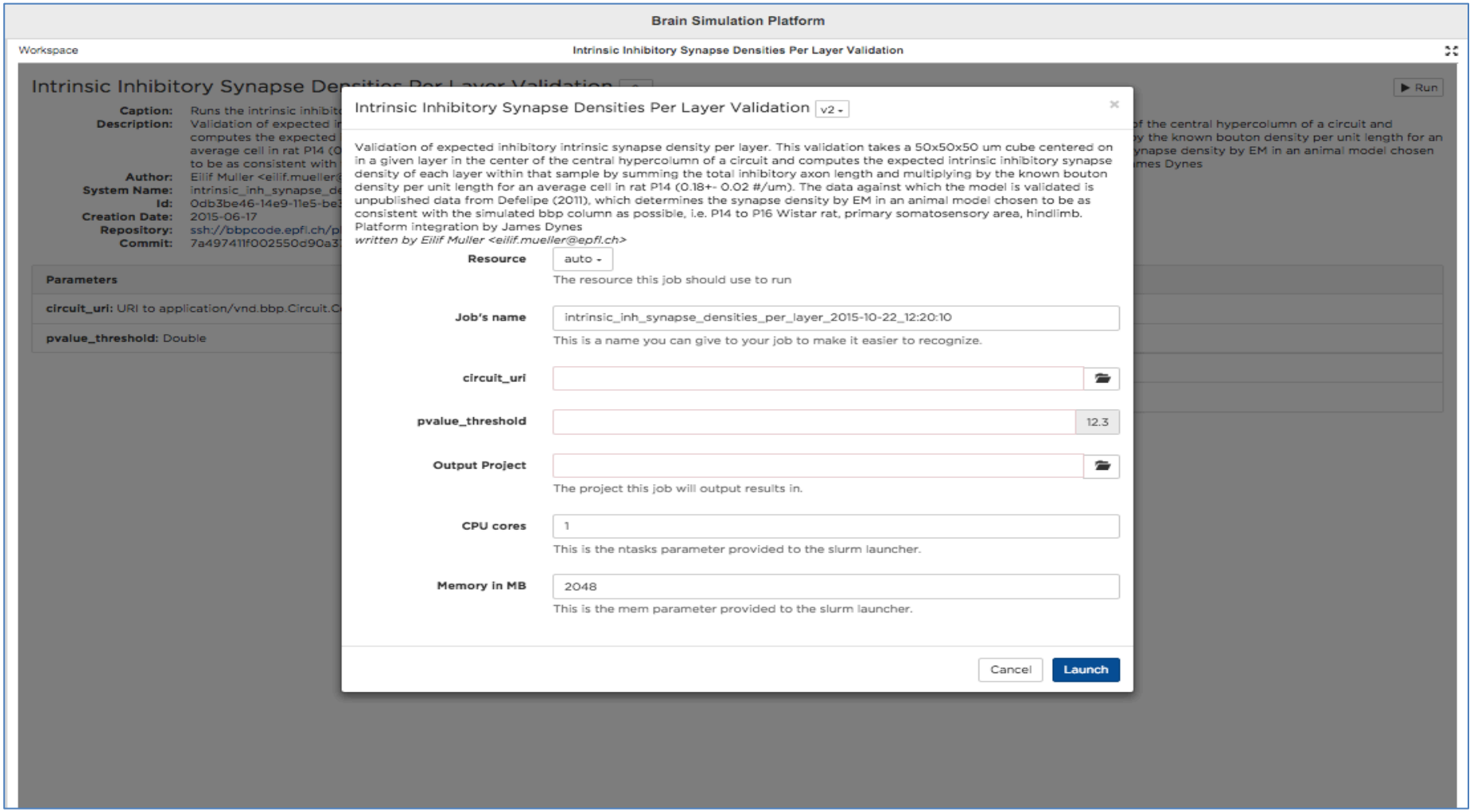

Figure 20: Screenshot of the Intrinsic Inhibitory Synapses Density Per Layer Circuit Validation App

Somata volume fraction circuit validation app

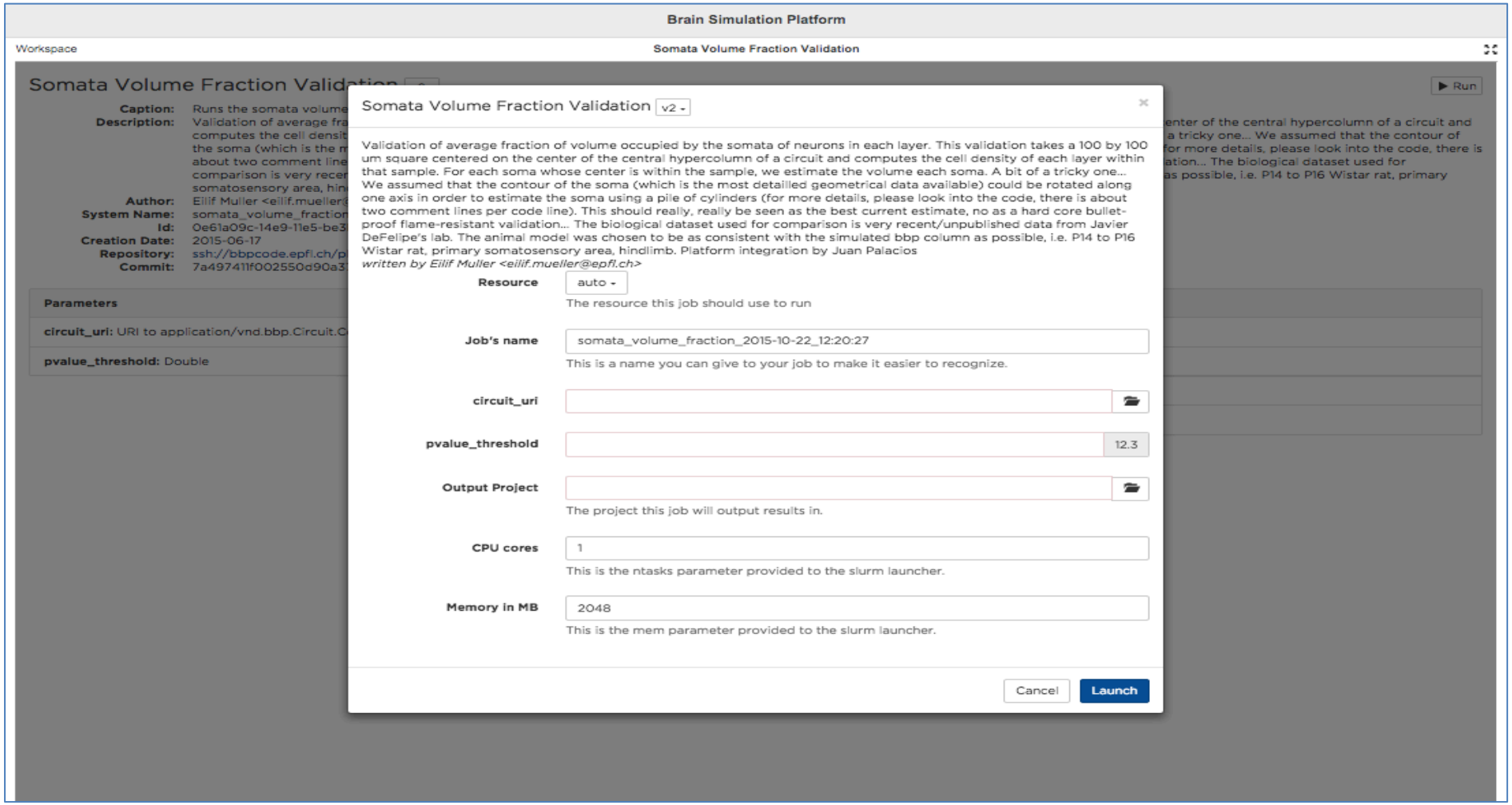

Figure 21: Screenshot of the Somata Volume Fraction Circuit Validation App

Spine length distribution validation app

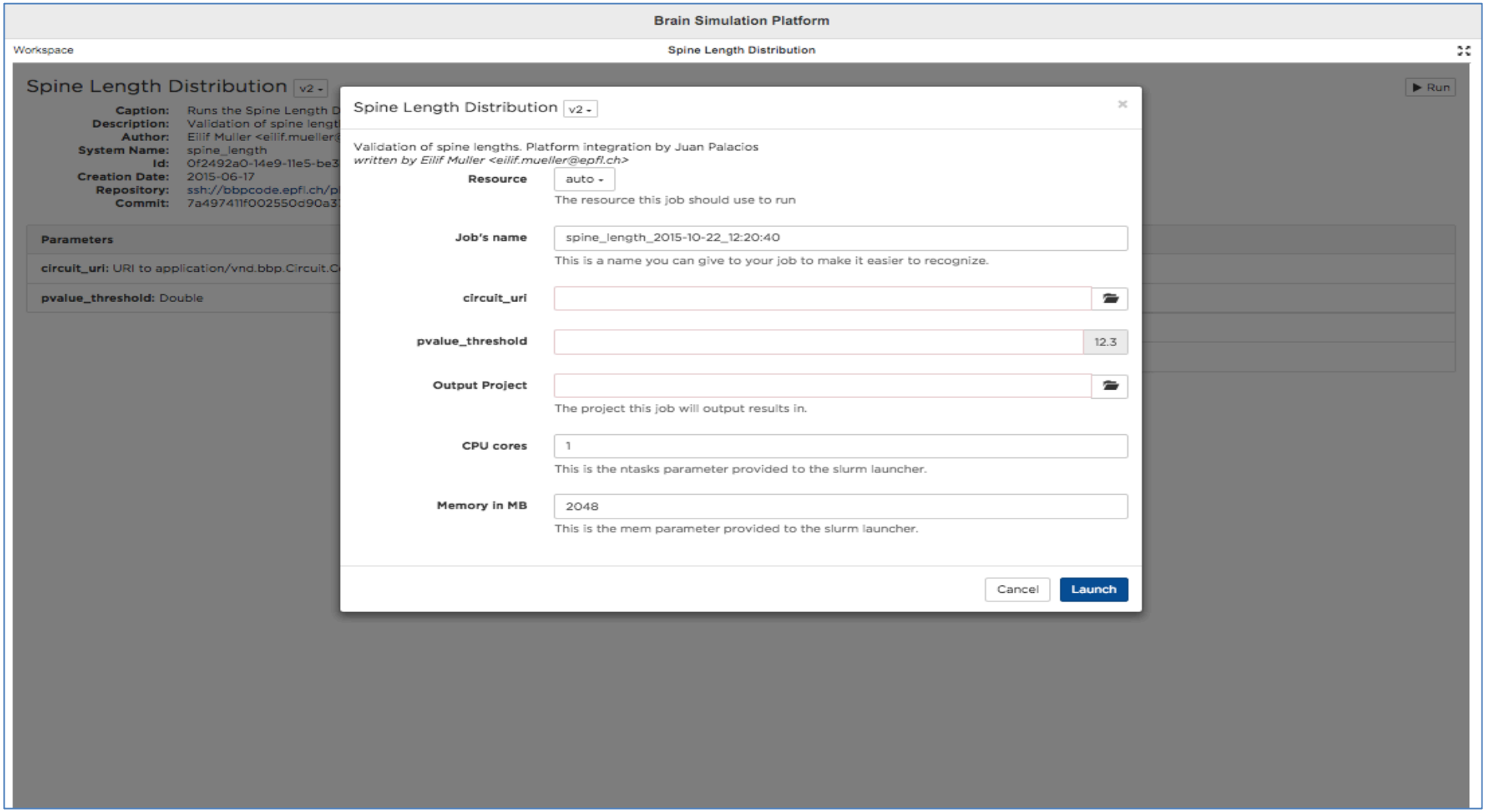

Figure 22: Screenshot of the Spine Length Distribution Validation App

Synapse count circuit validation

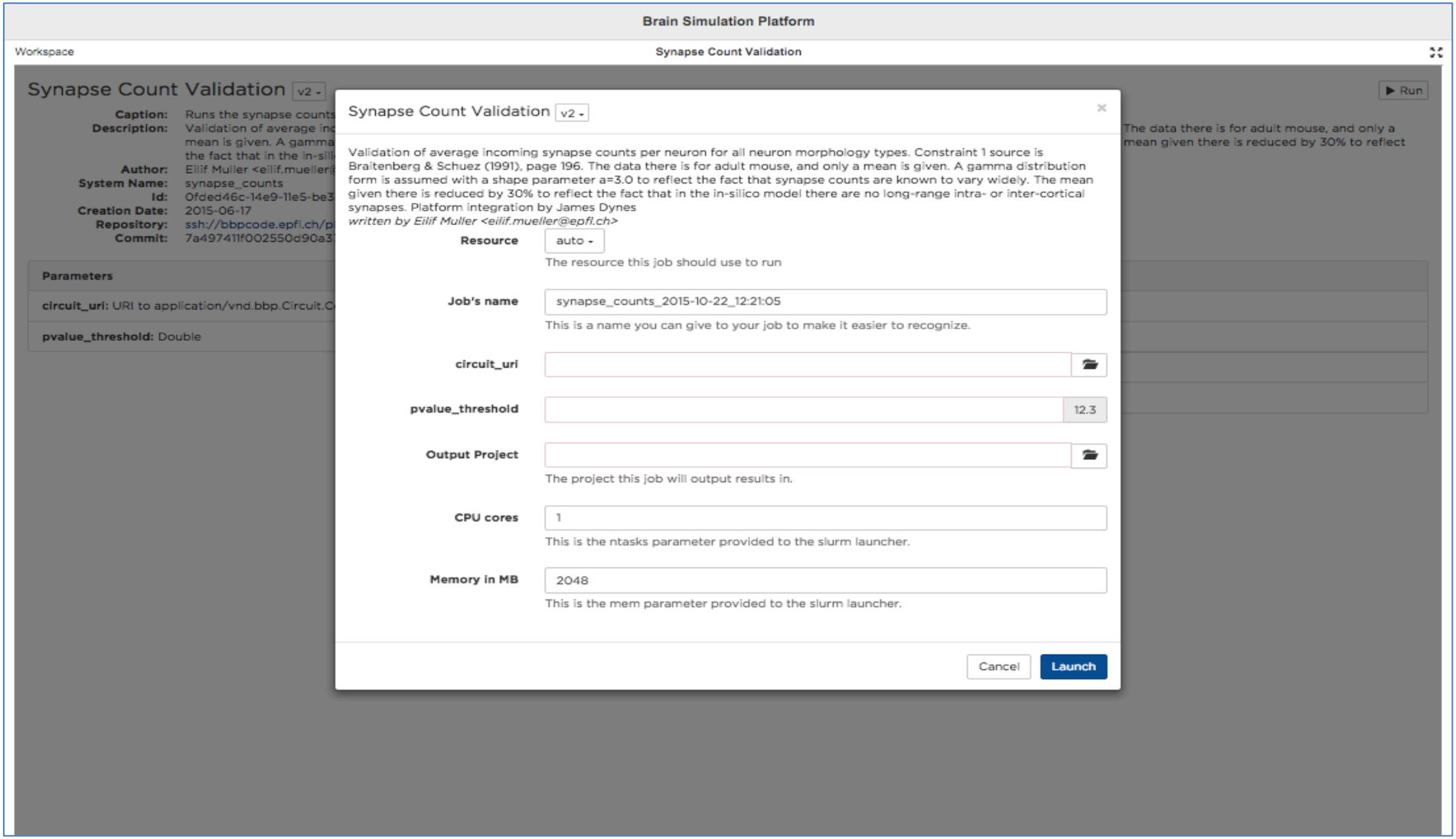

Figure 23: Screenshot of the Synapse Count Circuit Validation

Synapse overall density circuit validation app

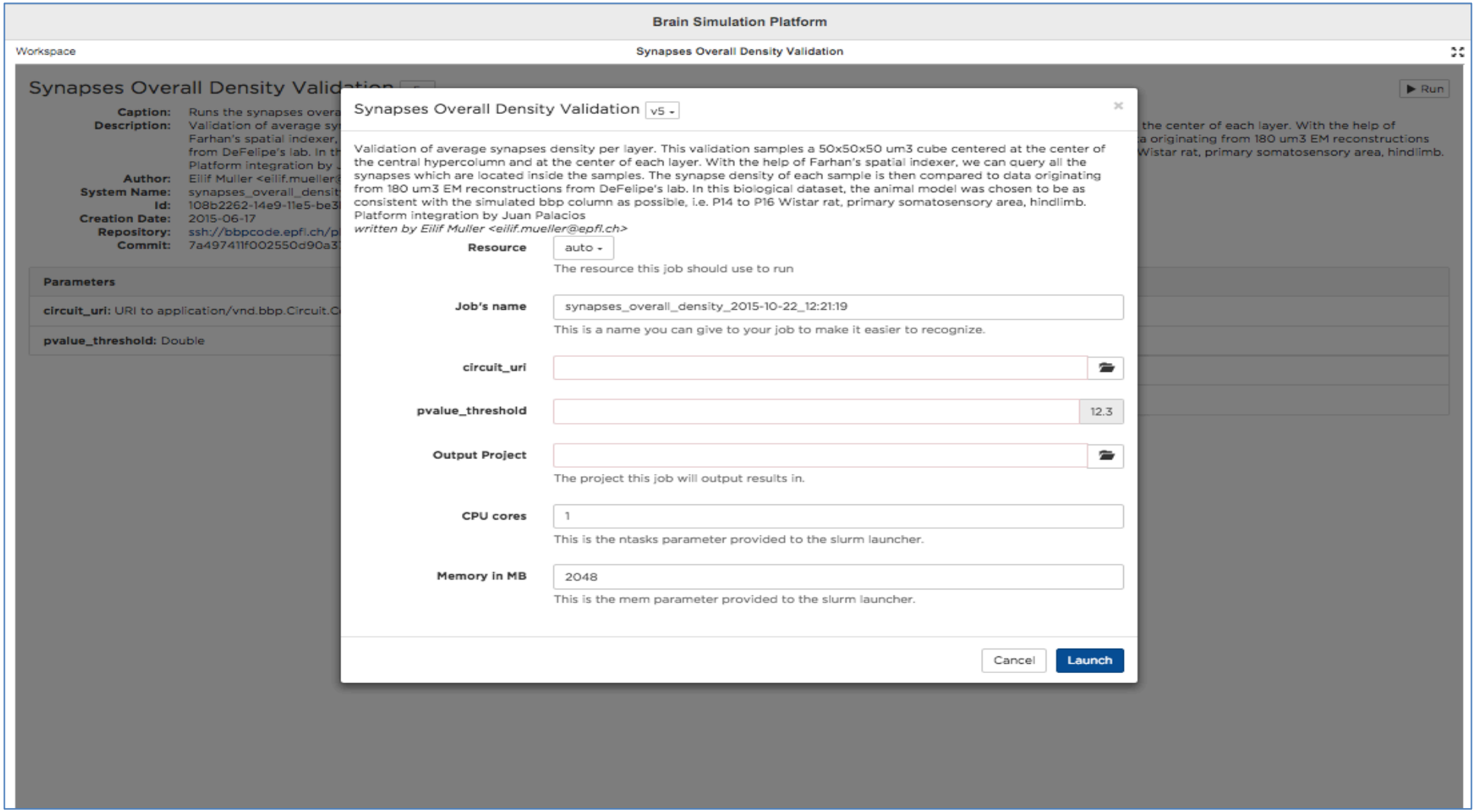

Figure 24: Screenshot of the Synapse Overall Density Circuit Validation App

NMC Portal

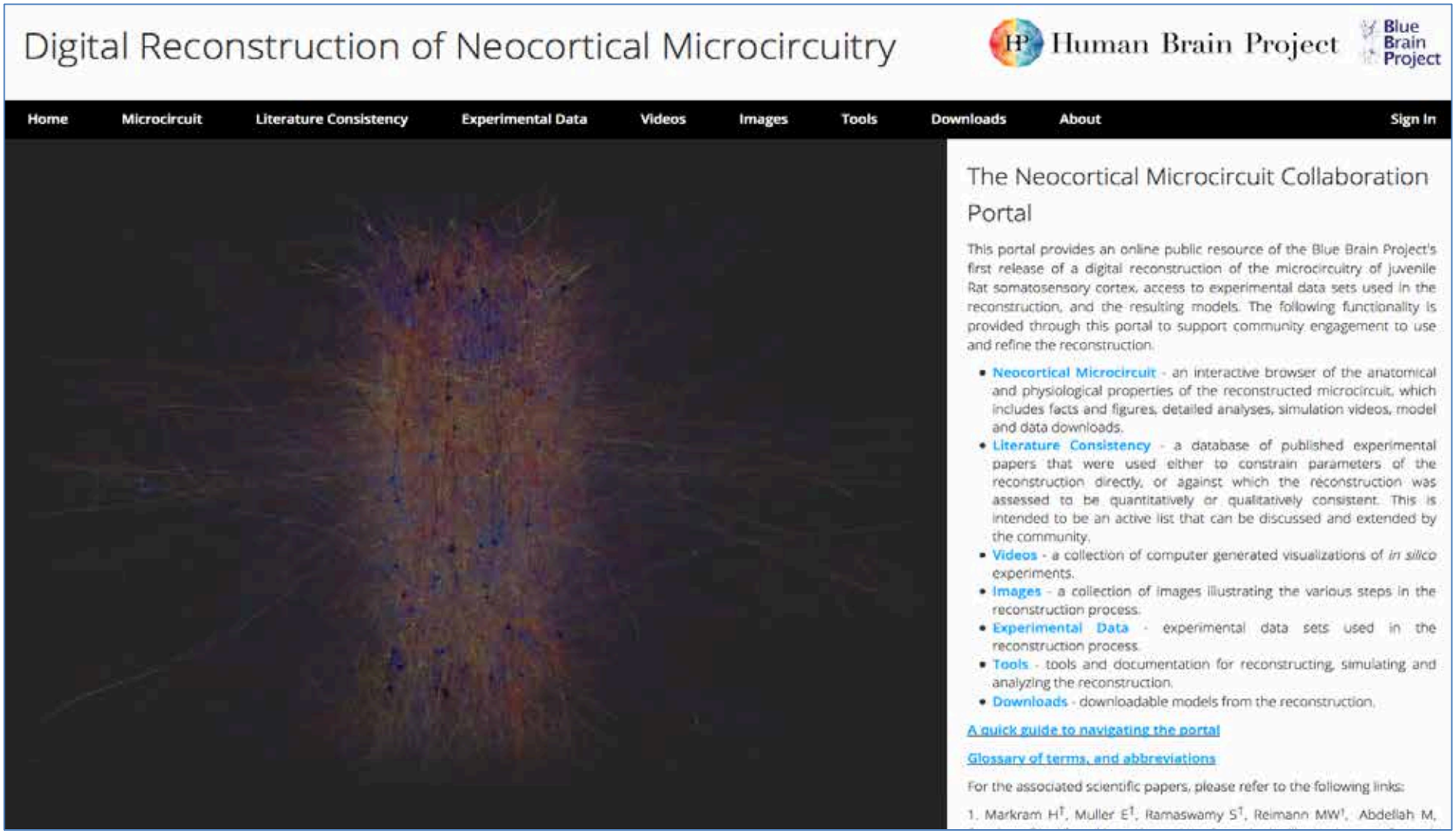

Figure 25: Screenshot of the Neocortical Microcircuit Collaboration Portal

WebSDA

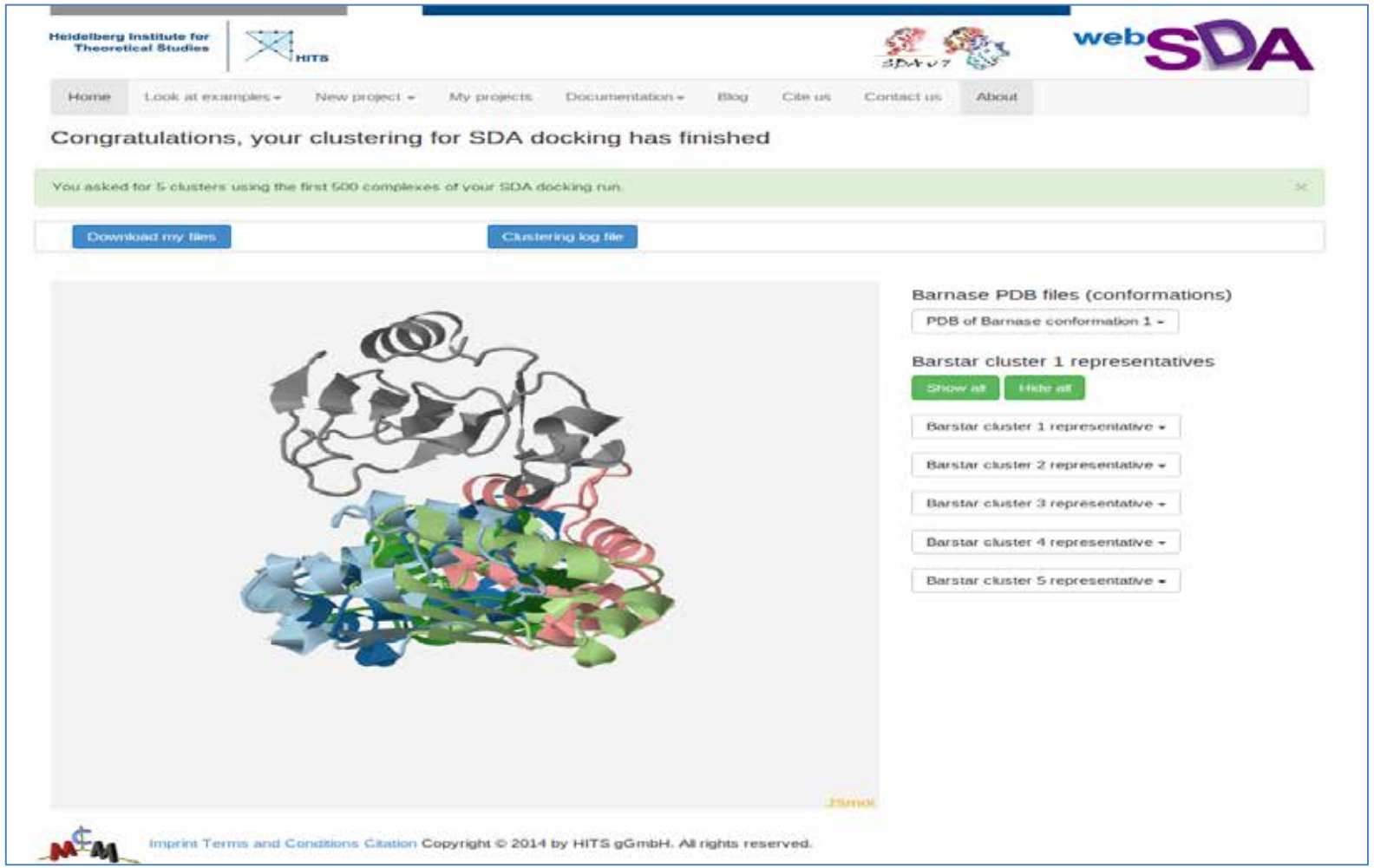

Figure 26: Screenshot of the WebSDA application