

OpenWorm
Bi-Weekly General Meeting
Agenda

Wednesday 02 July 2014
15:30 to 17:00 UTC

Attending (8): Johannes Rieke, Matteo Cantarelli, Giovanni Idili, Stephen Larson, Padraig Gleeson, Rayner Lucas, Tom Portegys, Michael Currie

Absent: Andrey Palyanov, Mark Watts, Jim Hokanson

Organizational Updates (Stephen):

- GSoC midterm evaluations are done
- [Waffle.io board](#) -- let's go through it during each update
- Flood of new volunteers
- Journal clubs picking back up
- Release 7 starting in July -- [sign up for times to meet with Stephen](#) 1 on 1
 - Discussions already in progress
 - Individual mails to the rest of you
- Release 6
 - [Neuromechanical modeling with Sibernetic](#)
 - Sibernetic receives muscle activations from 302 neurons (?)
 - Sibernetic sends sensory signals to 302 neurons (Andrey, Margarita)
 - [Sibernetic outputs to format that can be run through the movement validation pipeline](#) (?)
 - Improve Sibernetic performance (Chris, Mike)
 - [Geppetto simulation engine](#)
 - Worm body model from Sibernetic integrated into Geppetto (Sergey, Matteo)
 - Running network of 302 single compartment neurons in Geppetto (Matteo)
 - [Movement validation](#)
 - Output from worm body can be compared to WormBehavior database (Jim, Michael)
 - Motif analysis (Balazs)
 - [Optimization engine](#)
 - Fitness function (behavior classifier) for worm movement created from WormBehavior database (Jim, Michael)
 - [Data collection and representation](#)
 - Build data to model pipeline via PyOpenWorm (Stephen, Padraig)
 - Add ion channels to nervous system model (Stephen, Vahid)
 - Add synapses to nervous system model (Stephen)

- Add references to nervous system model (Stephen)
- [NeuroML model updates](#) -- upgrade to top level?
 - Full scale model (Padraig)
 - Simplified model - point neurons (Padraig)
- [Community outreach](#) (outside of issues)
 - Perspectives article (Balazs, Jim, Stephen)
 - SPH paper (Andrey, Sergey, Mike, Stephen)
 - Outreach to biologists (Stephen, Padraig, Giovanni)
 - Fundraise (Giovanni, Matteo, Stephen, Padraig, Balazs)

Individual Updates:

- **Matteo:**
 - Geppetto Sprint 28 closed, Sprint 29 Started
 - Cards being worked on waffle.io/openworm/org.geppetto
 - Doing one-on-one with all Geppetto contributors
 - WormSim design started
- **Giovanni:**
 - [Kickstarter](#)
 - surveys almost all in
 - KS committee meetings restarted
 - shipping physical rewards end of July
 - Geppetto
 - [Add console commands to camera controls](#)
 - Started on WormSim architectural design
 - how to integrate with existing code base in Geppetto?
- **Padraig**
 - General updates to jNeuroML - particularly export to NEURON
 - A bit more work on c302 - <https://github.com/openworm/CElegansNeuroML/tree/master/CElegans/pythonScripts/c302>
 - Need to update it to allow greater customisation of synaptic connection strengths - Tom P's comments
 - Tested PyOpenWorm...
 - Ideally more running examples included
 - **OpenWorm Data Manifest..?**
 - 1 page summary of all data sources used in project & what's in PyOpenWorm
 - [Issue here](#)
 - Quick test of Sibernetic...
- **Tom Portegys:**
 - Pharyngeal neurons

- **Rayner:**
 - Working on [motor neuron synapses to muscle cell](#)
 - Muscle model has five arms and ten compartments each
 - Looking at NML channels as described in the [muscle model repo](#)
 - Visualizing channel dynamics via jLEMS and I/V plots
- **Michael (on behalf of Jim / Michael):**
 - All features code translated!
 - Next steps in Python port from SegWormMatlabClasses to movement_validation:
 - Validation of Locomotion and Path features
 - Translation of statistics code
 - Volunteers who know Matlab and Python would accelerate this progress
 - Future steps:
 - Save features to disk - Matteo?
 - SciUnit testing framework with Rick Gerkin
 - Next step: Journal Club with him
 - Defining inputs to pipeline and handling transformation to normalized worm
 - Evaluation of all features together for “[Turing Test](#)”
 - Complete [documentation of feature calculation](#) and units
 - Expanding features - examine # of kinks while moving forward, backward, paused for example
 - Work closely with Schafer Lab to coordinate activities
- **Johannes:**
 - Recording format: agreed with group from Poland on data format (NSDF)
 - Python API to write NSDF
 - Java code to read NSDF
 - Python modules to transform Neuron, Brian files to NSDF
 - Created all_os_utils directory in org.geppetto to load & build Geppetto on all operating systems, including Windows
<https://github.com/openworm/org.geppetto/issues/99>
 - Needs to be tested for Linux and OSX
 - Instructions for Windows need to be added

Meeting concludes at 10:57 UTC.