**2019-2020 TL1 Proposed Timeline**

Carter Allen

Total timeframe: September 1, 2019 – August 31, 2020

**Phase 0:** Literature, Software, and Preliminary Simulations

*August, 2019*

* Perform a review of available software for working with network data and fitting stochastic block models (Python graph-tool).
* Perform a review of available software for fitting Bayesian joint models for data integration.
* Run preliminary simulations of network models (possibly multigraphs).
* Review and extend the literature search conducted for the TL1 proposal.
* Gain more familiarity with nuances of SBM variants.

**Phase 1:** Data Gathering and Pre-Processing

*September, 2019*

* Collect DNA methylation, gene expression, and literature mining and perform necessary data pre-processing.
* Develop and validate code to generate network objects from original data with graph-tool.

**Phase 2:** Specific Aim #1

*October – November, 2019*

* Develop Bayesian data integration model for edge weights of integrated network.
* Possibly consider alternative methods, such as direct application of multi-graph SBMs.
* 1st TL1 quarterly meeting (TBD)

**Phase 3:** Specific Aim #2

*December, 2019 – March, 2020*

* Fit SBMs to data-integrated network to make inference on community structure.
* Compare alternative estimation algorithms to determine robustness of results.
* Relate findings to published literature to identify important results.
* TL1 midyear meeting (TBD)

**Phase 4:** Manuscript, Conference Travel, F-award

*April – August, 2020*

* Prepare and submit manuscript based on current results.
* Prepare and submit F application based on current results.
* Prepare for and attend ACTS conference
* Identify and apply to at least one other conference
* Draft and submit TL1 renewal application
* 3rd TL1 quarterly meeting (TBD)