

Graph Genomes

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The Problem

1. Population assembly graphs could be really useful
2. Tools exist to:
 - Build a graph from multiple individuals, and
 - Visualize graphs; but...
3. No one has tied it all together to visualize a population assembly graph

Our project

- Simulate individual chromosomes with structural variants (SVGen)
- Assemble a population graph from the reference (GRCh38) and simulated chromosomes (TwoPaCo)

Our project (cont)

- Create interactive visualizations of the graph
 - Force-directed layout
 - Sequence Tube Map
 - Chord graph
- Tie everything together as a simple browser (Graphy McBrowsersurface™)

Demo

<http://graphymcbrowserface.umbc.in/>