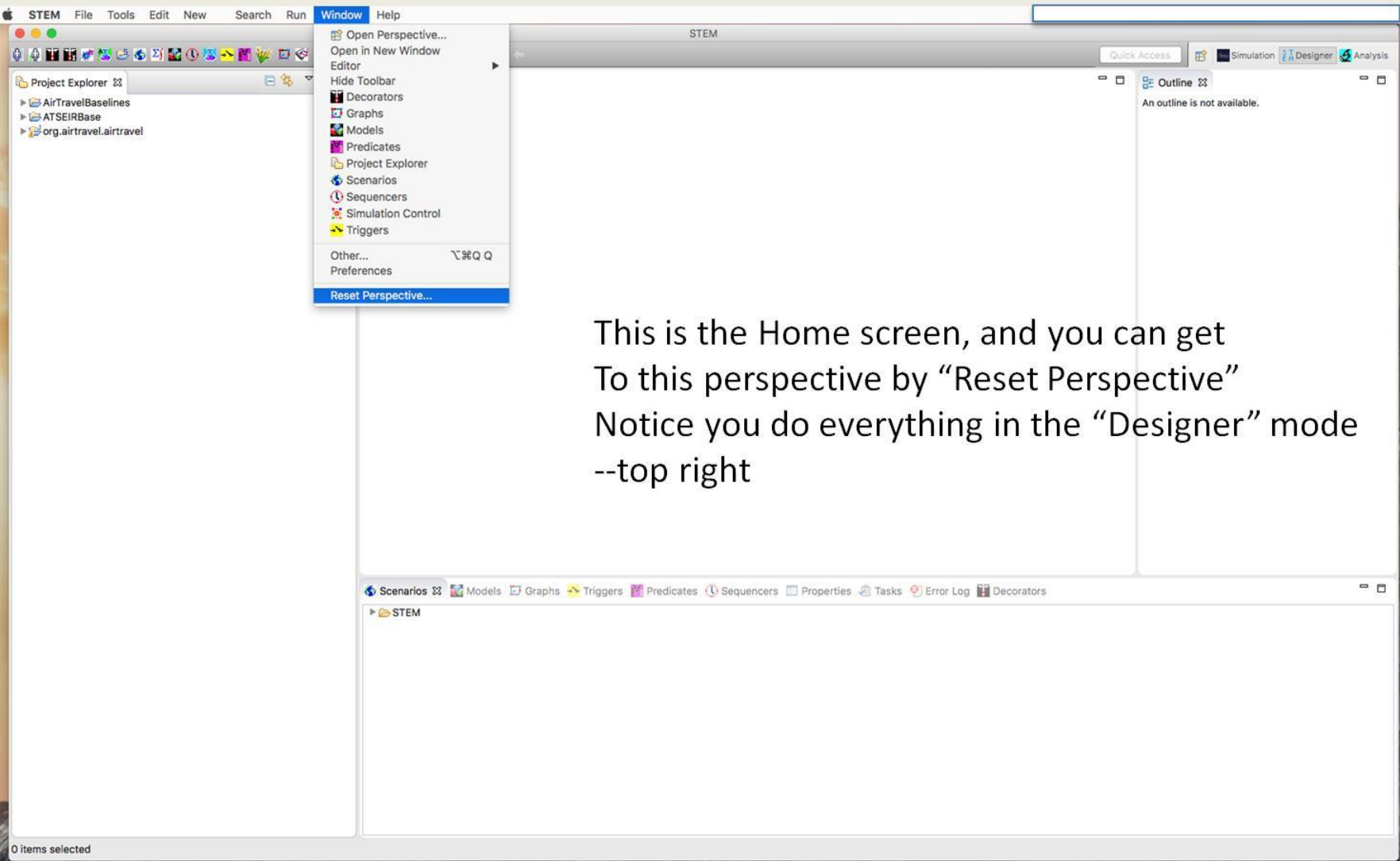


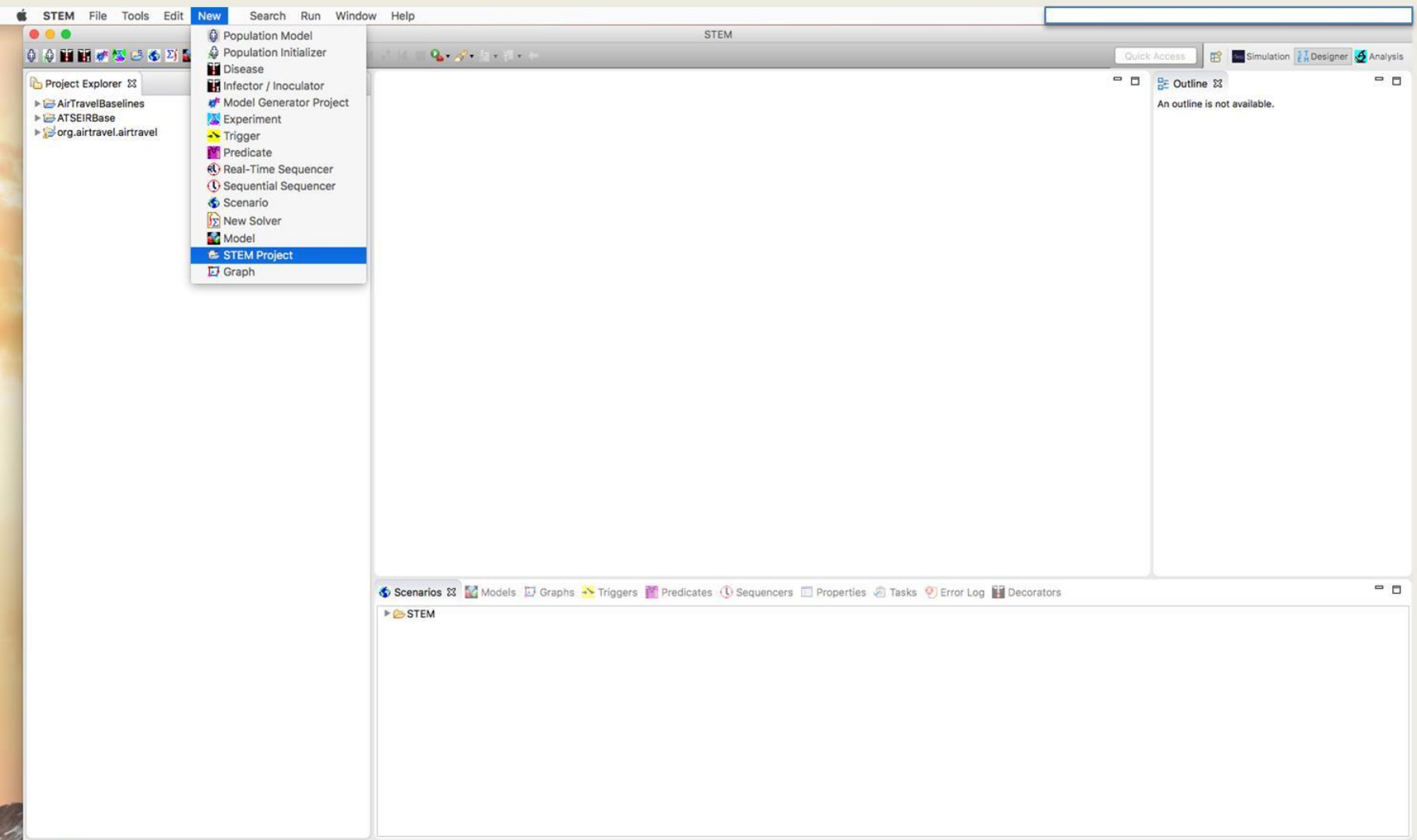
STEM

- Step by step model set up with screen shots
- This is an example of base model disease with air and ground transportation
 - Using a basic Ebola and Flu examples
 - 1 initial case
 - 10 initial cases
 - 6 month time frame
 - Starting from Queens, New York
 - Finite Solver

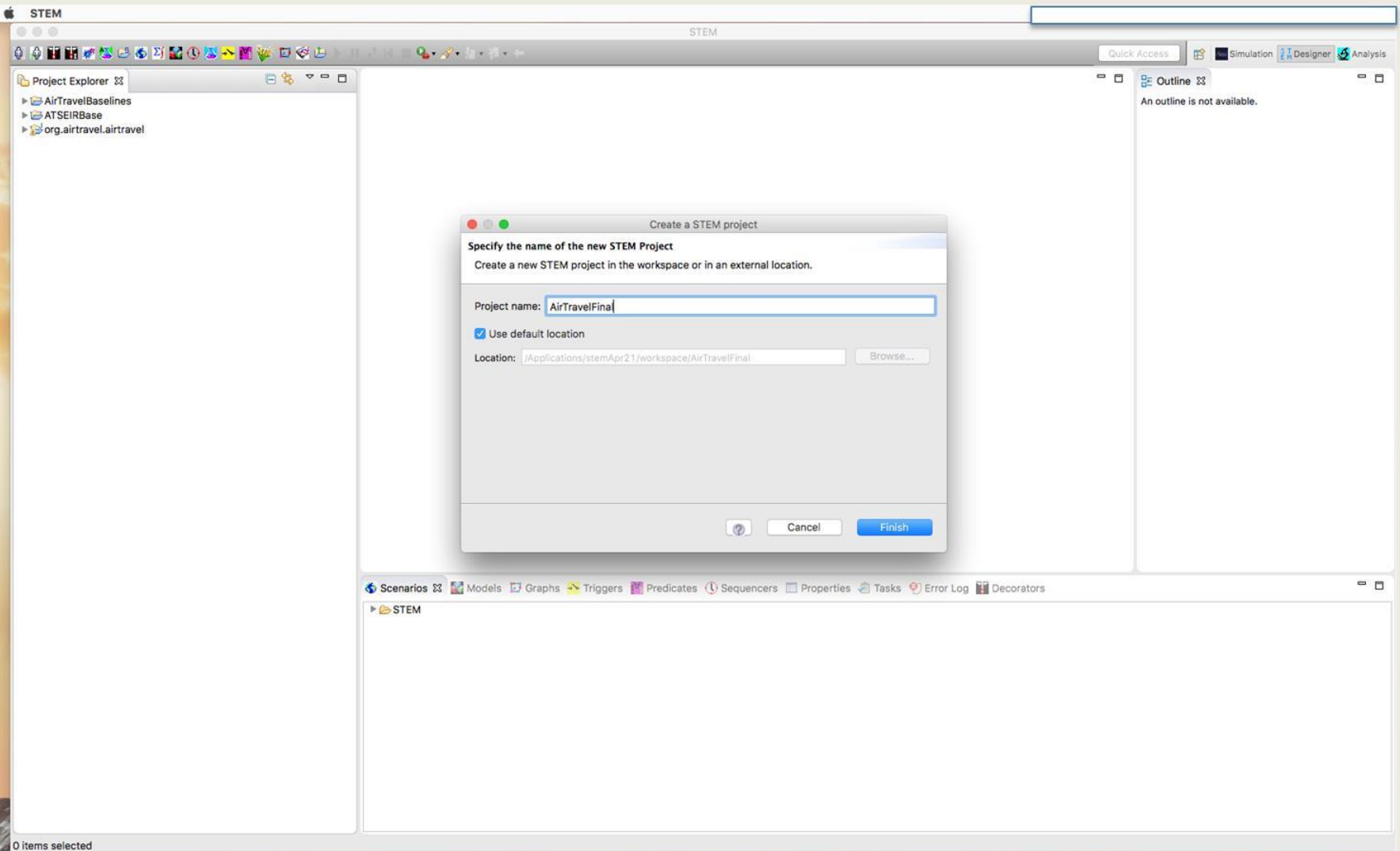


This is the Home screen, and you can get To this perspective by “Reset Perspective” Notice you do everything in the “Designer” mode --top right

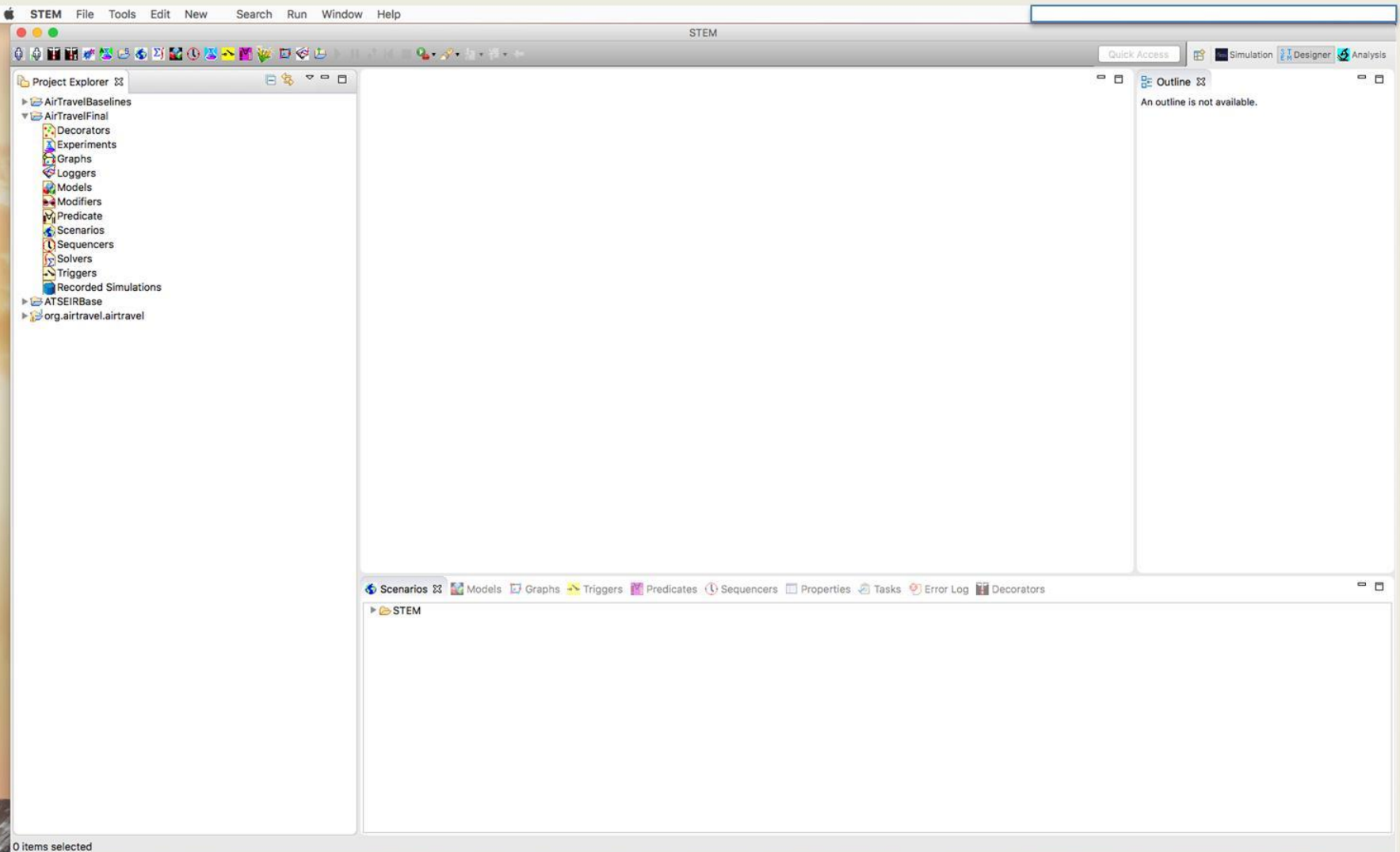
Start the Project with new STEM Project...everything falls in this Folder



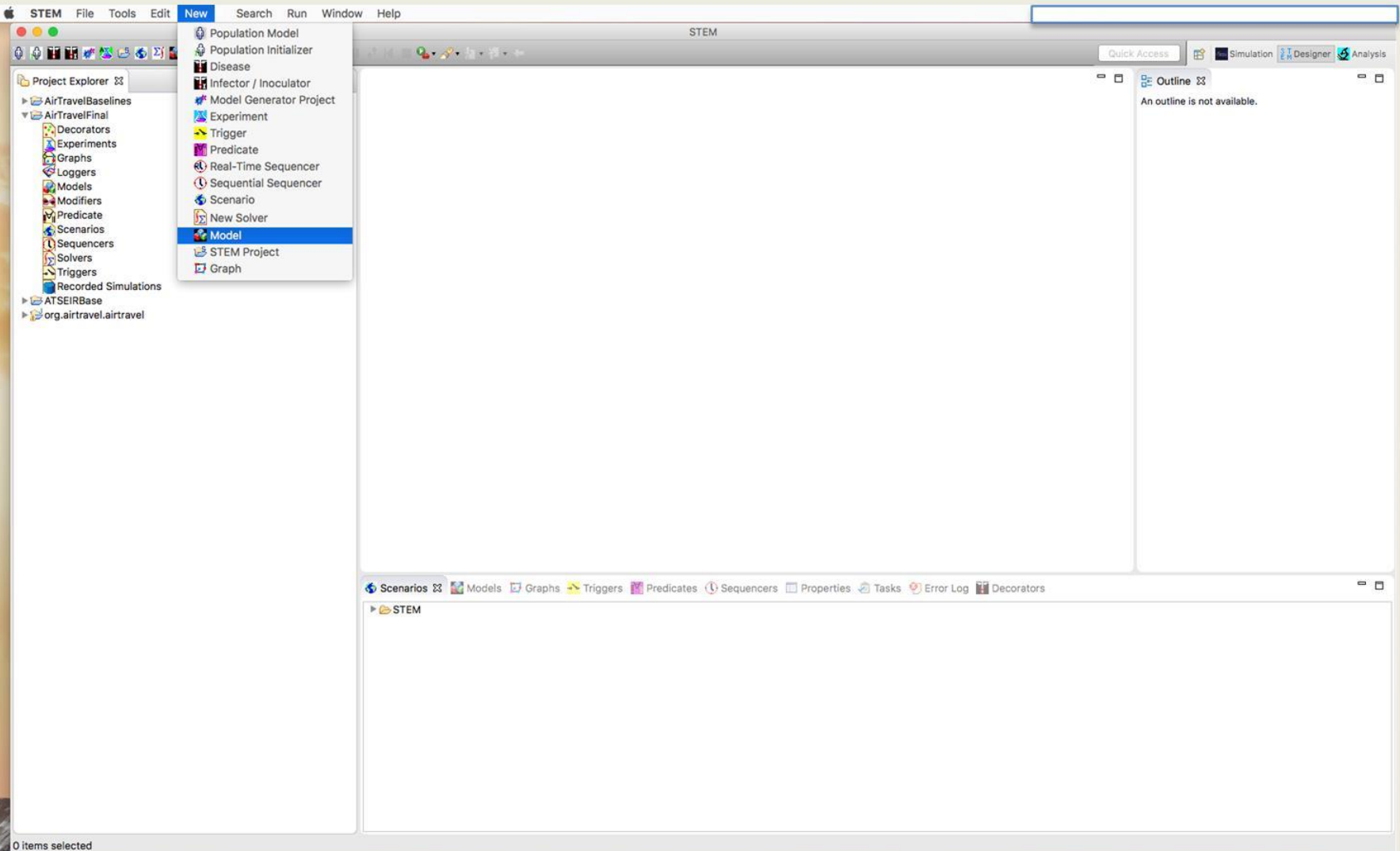
Name it whatever you want



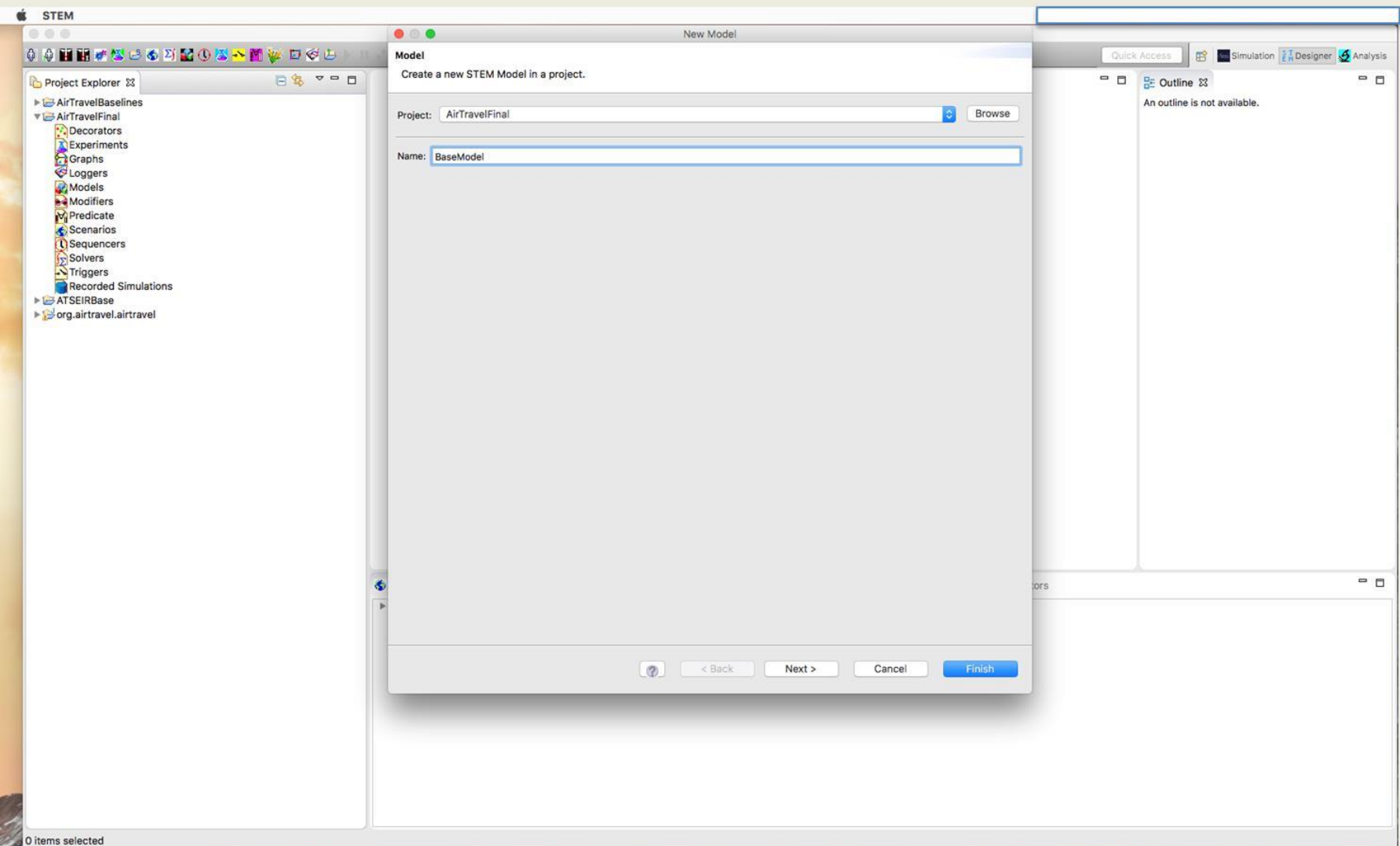
The left side will automatically populate with the necessary folders.



You will start each new Model here...first thing I recommend is creating a baseline Model first that you can add to each of the diseases without having to re-create. So, one time build the airtravel, ground, populations, etc... So, lets start with baseline model



I just call it BaseModel...



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

BaseModel.model

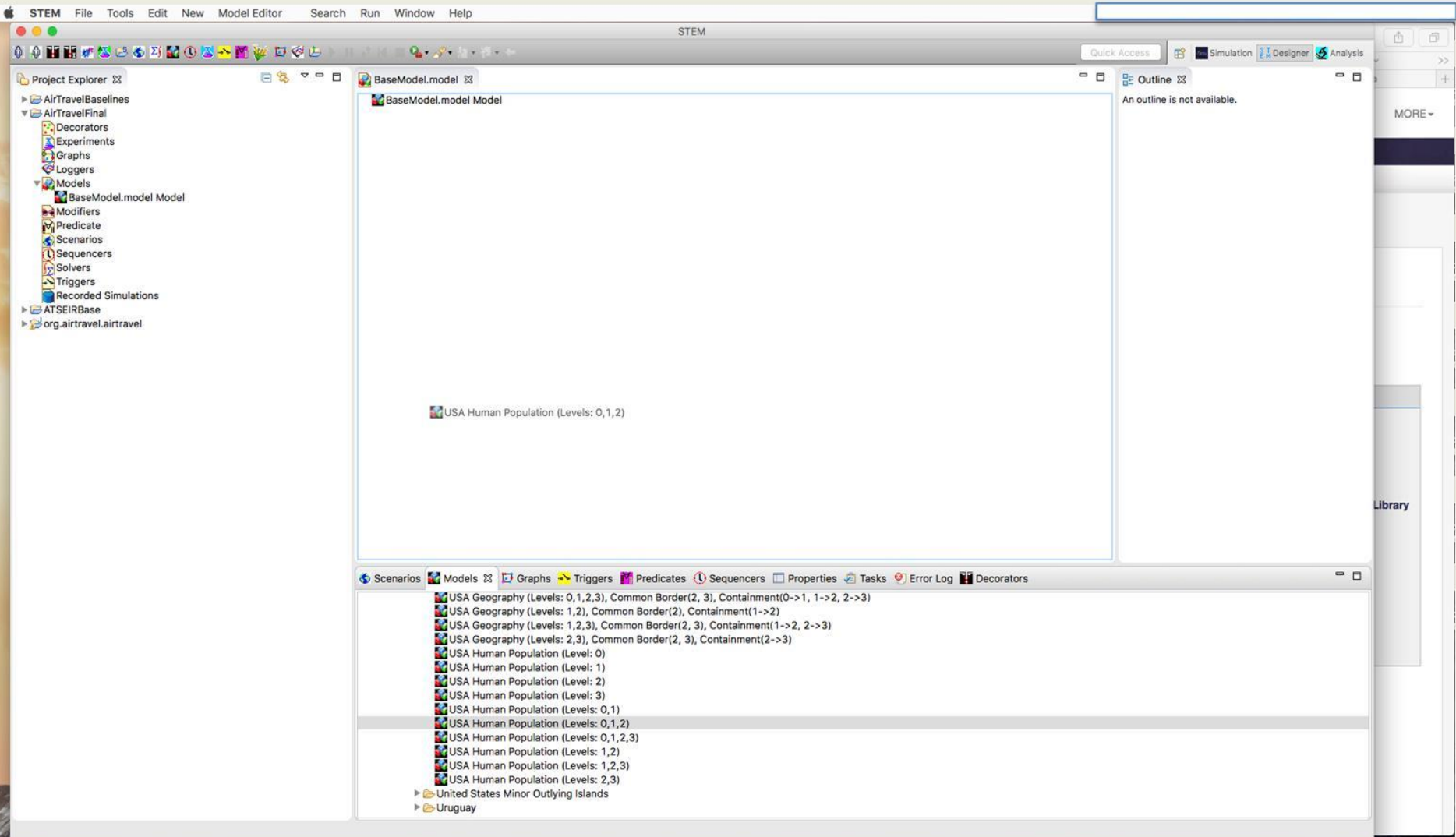
BaseModel.model Model

Outline

An outline is not available.

STEM

Now to the BaseModel Add,
US Human Population, 0,1,2 (in Models Tab)
This is US Pop in States and Counties



Project Explorer

- AirTravelBaselines
 - Decorators
 - Experiments
 - Graphs
 - Loggers
 - Models
 - Baselines.model Model
 - MEX_0_1_2_population.model MEX Human Population (L...
 - MEX_0_MEX_1.graph Air transport between MEX(0) and I...
 - MEX_1_MEX_2.graph Air transport between MEX(1) and I...
 - MEX_1_USA_1.graph Road Transportation Network (200...
 - USA_0_1_2_population.model USA Human Population (Le...
 - USA_0_USA_1.graph Air transport between USA States (...
 - USA_1_USA_2.graph Air transport between USA Counties...
 - USA_2_USA_2.graph Road Transportation Network (2004...
 - ZZZ_-1_ZZZ_0.graph Air transport between ZZZ(-1) and
 - EbolaBaseline.model Model
 - H1N1Baseline.model Model
 - Plague.model Model
 - SBase1.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - BaselineTime.sequencer Sequencer
 - Solvers
 - Triggers
 - Recorded Simulations
- AirTravelFinal
 - Decorators
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

*BaseModel.model

- BaseModel.model Model
 - USA_0_1_2_population.model USA Human Population (Levels: 0, 1, 2)
 - USA_0_1_2.model USA Geography (Levels: 0, 1, 2), Common Border(2), Containment(0->1, 1->2)
 - USA_2_human_2000_population.graph The 2000 Human population for all USA Counties (except Puerto Rico)

Outline

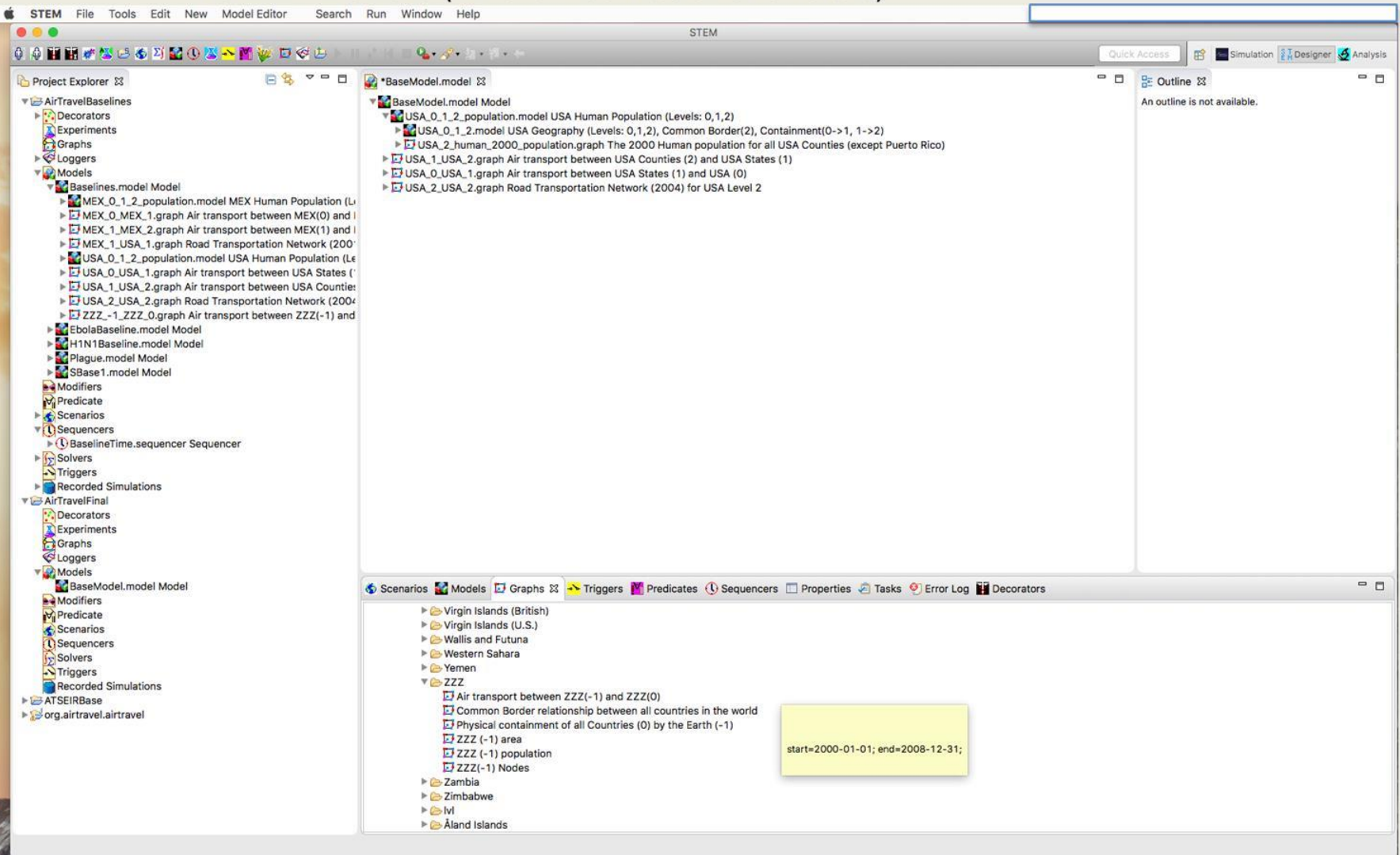
An outline is not available.

Scenarios Models Graphs Triggers Predicates Sequencers Properties Tasks Error Log Decorators

- uganaoa
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
 - Air transport between USA Counties (2) and USA States (1)
 - Air transport between USA States (1) and USA (0)
 - All USA Counties (2) (except Puerto Rico)
 - All USA States (1) (except Puerto Rico)
 - Common Border relationship within Vermont country USA level start=2006-01-01; end=2006-12-31;
 - Common Border relationship within country USA
 - Common Border relationship within country USA counties in ot
 - Physical containment of the Counties of The United States (2) by the States of The United States (1)
 - Physical containment of the States (1) by USA (0)
 - Physical containment of the States (3) by USA (2) Vermont
 - Road Transportation (2007) Vermont (Lvl 3)
 - Road Transportation Network (2004) for USA Level 1

Add Air Transport 2 and 1,- Within states
 Air transport 1 and 0 – Between States
 Add Ground Transport 2004 – Level 2
 And ZZZ -1 and 0 (This is international aircraft)

These are all in Graphs Tab



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

*BaseModel.model

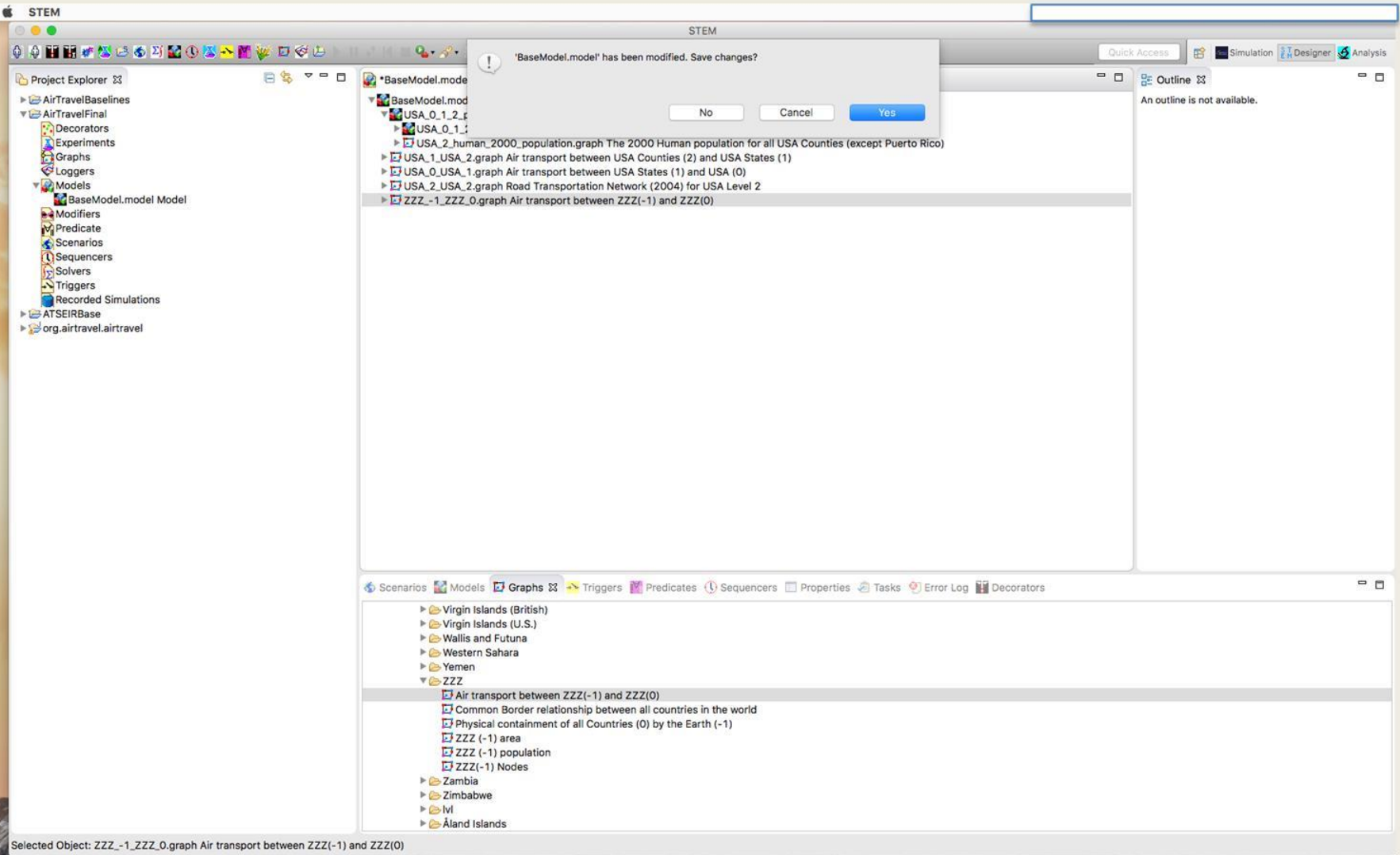
- BaseModel.model Model
 - USA_0_1_2.model USA Human Population (Levels: 0,1,2)
 - USA_0_1_2.model USA Geography (Levels: 0,1,2), Common Border(2), Containment(0->1, 1->2)
 - USA_2_human_2000_population.graph The 2000 Human population for all USA Counties (except Puerto Rico)
 - USA_1_USA_2.graph Air transport between USA Counties (2) and USA States (1)
 - USA_0_USA_1.graph Air transport between USA States (1) and USA (0)
 - USA_2_USA_2.graph Road Transportation Network (2004) for USA Level 2
 - ZZZ_-1_ZZZ_0.graph Air transport between ZZZ(-1) and ZZZ(0)

Outline

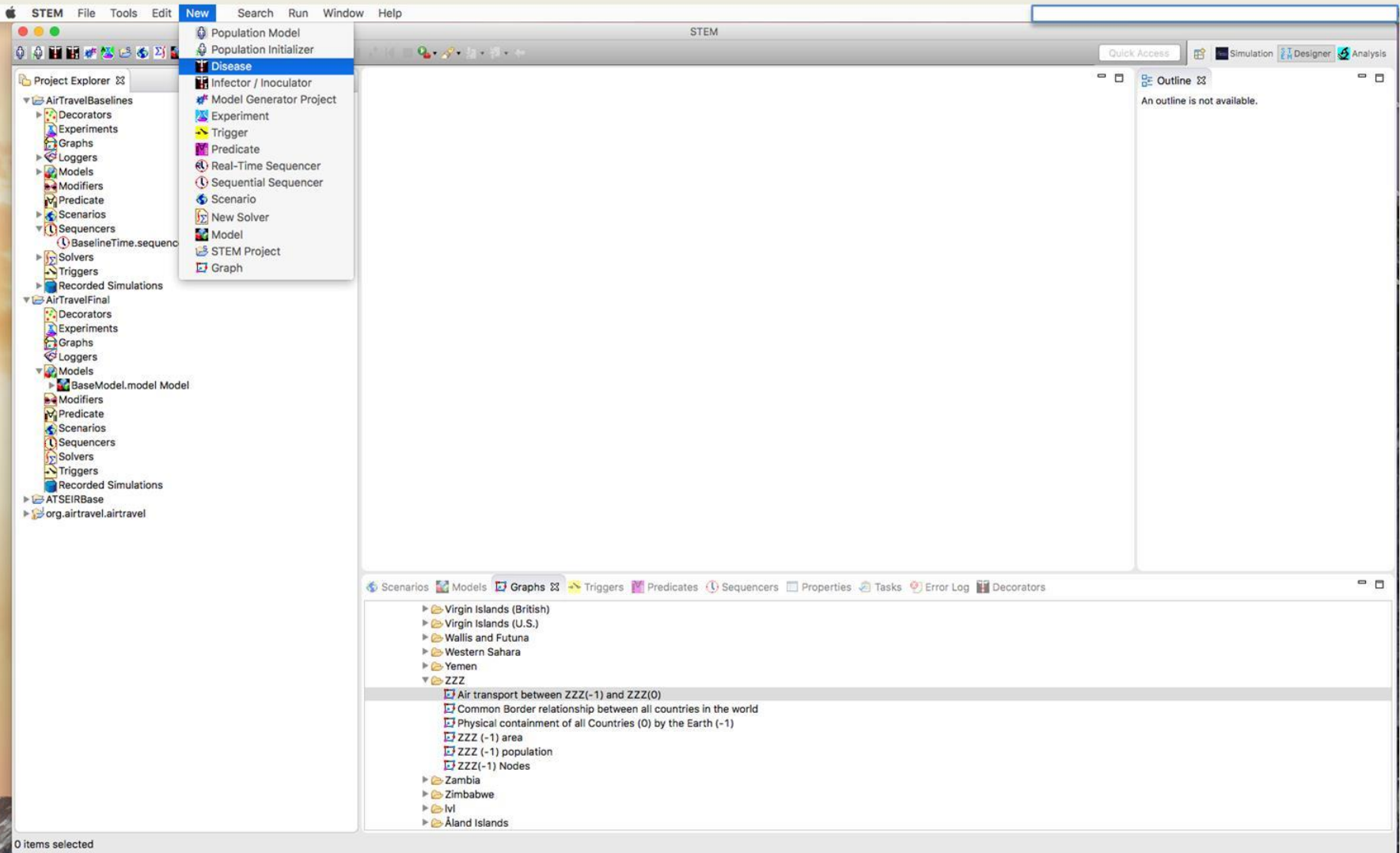
An outline is not available.

- Virgin Islands (British)
- Virgin Islands (U.S.)
- Wallis and Futuna
- Western Sahara
- Yemen
- ZZZ
 - Air transport between ZZZ(-1) and ZZZ(0)
 - Common Border relationship between all countries in the world
 - Physical containment of all Countries (0) by the Earth (-1)
 - ZZZ (-1) area
 - ZZZ (-1) population
 - ZZZ(-1) Nodes
- Zambia
- Zimbabwe
- IvI
- Åland Islands

Once you close the tab it will save



Lets create a new disease



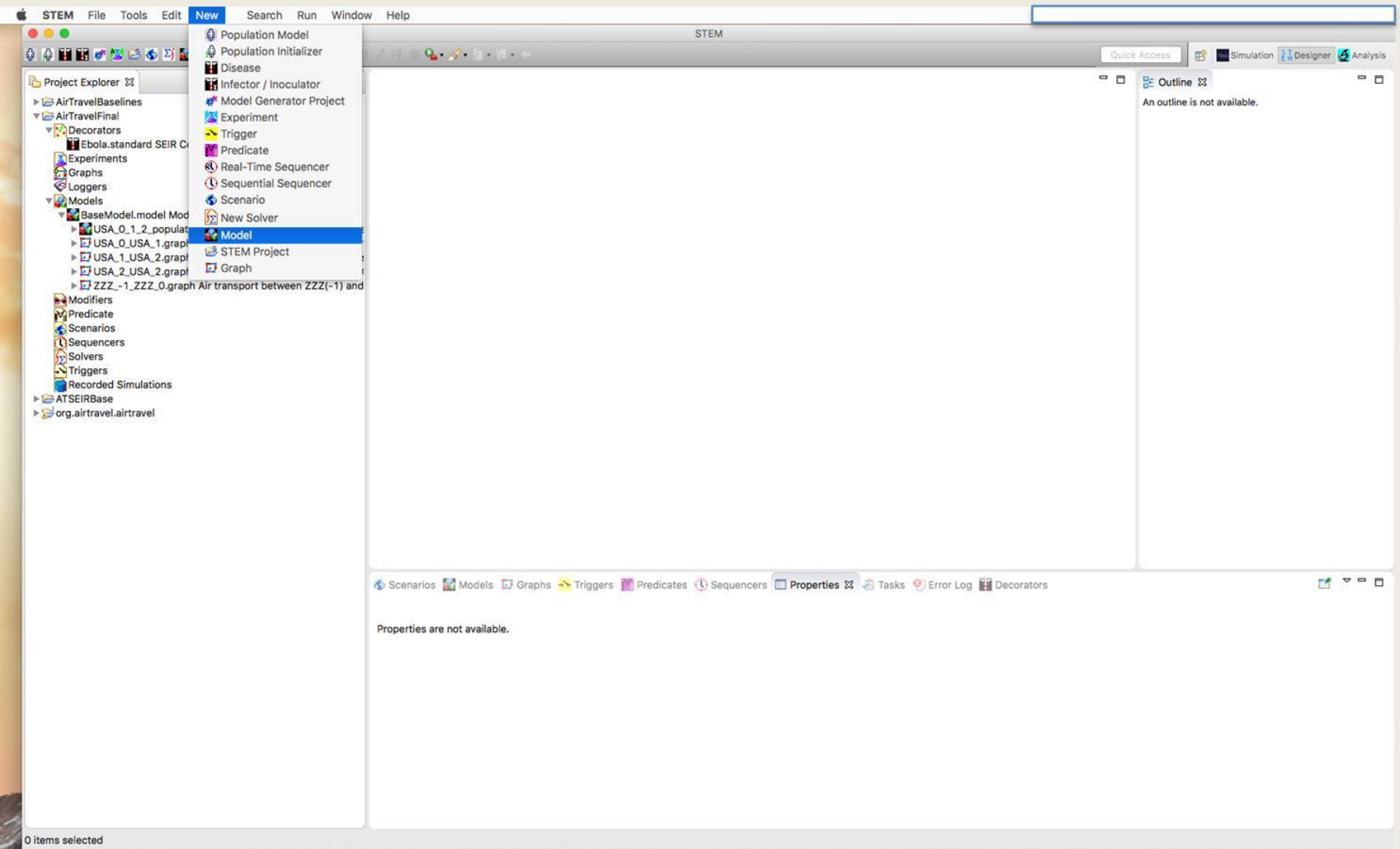
Name the disease, here Ebola, and then all the parameters are on the Excel Spreadsheet for each disease. Keep all other variables to the default. This is Ebola

The screenshot displays the STEM software interface with the 'New Disease' dialog box open. The dialog box is titled 'New Disease' and contains the following fields and options:

- Project:** AirTravelFinal
- Name:** Ebola
- Disease Model:** SEIR Compartment Model
- Add stochastic noise:** No Yes
- Seed:** 1
- Disease Name:** Ebola
- Population:** human
- Time Period (TP):** 86400000 ms
- Frequency Dependent:** No Yes
- Reference Pop Density:** 100 1/SQ KM
- Road.Net.Inf.Proportion:** 0.01 fraction per Road
- Characteristic Mixing Distance:** 2.25 km
- Transmission Rate (β):** 0.12 [1/time]
- Non-Linearity Coefficient:** 1.0 ≥ 0.0
- Infectious Recovery Rate (γ):** 0.07 [1/time]
- Infectious Mortality Rate (δ):** 0.047 [1/time]
- Immunity Loss Rate (α):** 0.002 [1/time]
- Incubation Rate (ϵ):** 0.10 [1/time]

The 'Incubation Rate (ϵ)' field is highlighted with a blue border. The background shows the Project Explorer on the left and the Outline pane on the right, which displays 'An outline is not available.'

Now for Ebola Model, you create a New Model, and add the basemodel and the New disease...



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - USA_0_1_2_population.model USA Human Population (Le
 - USA_0_USA_1.graph Air transport between USA States ('
 - USA_1_USA_2.graph Air transport between USA Counties
 - USA_2_USA_2.graph Road Transportation Network (2004
 - ZZZ_-1_ZZZ_0.graph Air transport between ZZZ(-1) and
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

Ebola.model

- Ebola.model Model
 - BaseModel.model Model

Outline

An outline is not available.

1 item selected

Property	Value

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model**
 - USA_0_1_2_population.model USA Human Population (Le
 - USA_0_USA_1.graph Air transport between USA States ('
 - USA_1_USA_2.graph Air transport between USA Counties
 - USA_2_USA_2.graph Road Transportation Network (200
 - ZZZ_-1_ZZZ_0.graph Air transport between ZZZ(-1) and
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

*Ebola.model

- Ebola.model Model
 - BaseModel.model Model

Outline

An outline is not available.

1 item selected

Resource	Property	Value

Project Explorer

- AirTravelBaselines
- AirTravelFinal
- Decorators
- Ebola.standard SEIR Compartment Model**
- Experiments
- Graphs
- Loggers
- Models
 - BaseModel.model Model
 - USA_0_1_2_population.model USA Human Population (Le
 - USA_0_USA_1.graph Air transport between USA States ('
 - USA_1_USA_2.graph Air transport between USA Countie
 - USA_2_USA_2.graph Road Transportation Network (2004
 - ZZZ_-1_ZZZ_0.graph Air transport between ZZZ(-1) and
 - Ebola.model Model
- Modifiers
- Predicate
- Scenarios
- Sequencers
- Solvers
- Triggers
- Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

*Ebola.model

- Ebola.model Model
 - BaseModel.model Model
 - Ebola.standard SEIR Compartment Model**

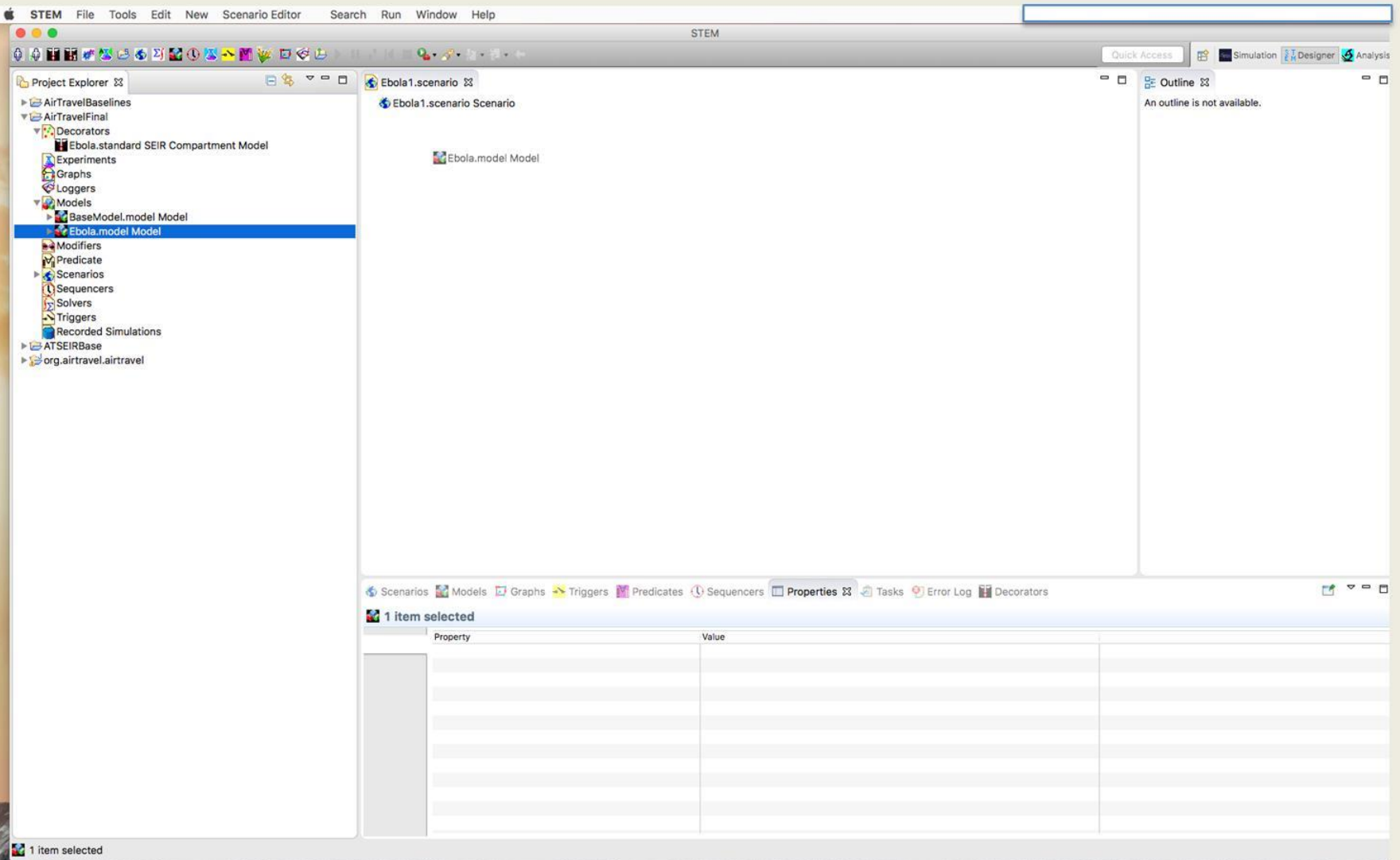
Outline

An outline is not available.

1 item selected

Resource	Property	Value

Drag the Model from Model on the left side into the open scenario in the middle panel
Notice I named the scenario Ebola1 – One initial case



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR C
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Mod
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

- Population Model
- Population Initializer
- Disease
- Infectior / Inoculator
- Model Generator Project
- Experiment
- Trigger
- Predicate
- Real-Time Sequencer
- Sequential Sequencer**
- Scenario
- New Solver
- Model
- STEM Project
- Graph

STEM

Quick Access Simulation Designer Analysis

*Ebola1.scenario

- Ebola1.scenario Scenario
 - Ebola.model Model

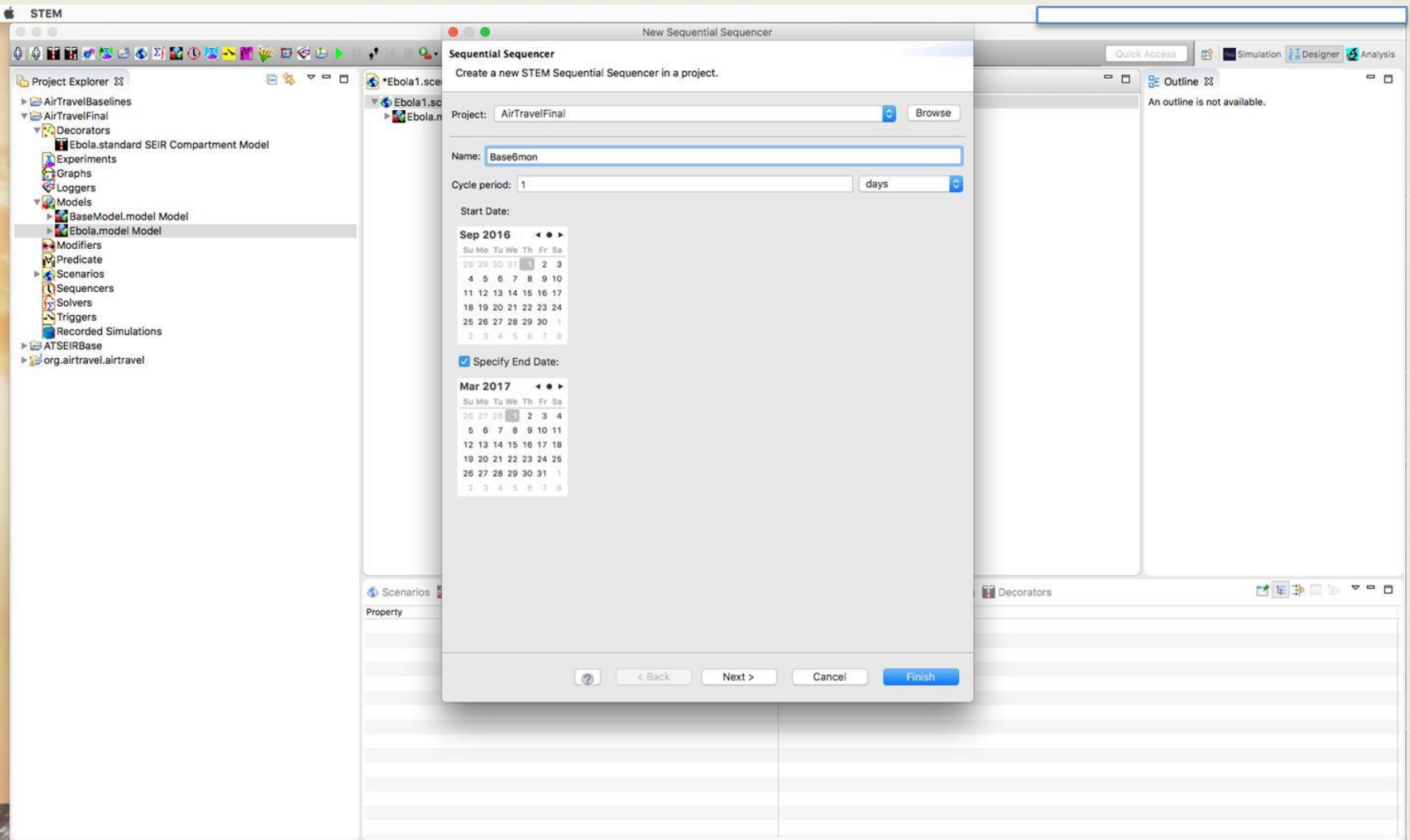
Outline

An outline is not available.

Scenarios Models Graphs Triggers Predicates Sequencers **Properties** Tasks Error Log Decorators

Property	Value

Now you need a time frame—You will only have to do this once, and reuse the model.
This is a new Sequencer...I name it base6months...
From 1 Sept 2016, to 1 March 2016 (specific end date.)- finish



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Ebola.model Model**
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Solvers
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

*Ebola1.scenario Base6mon.sequencer

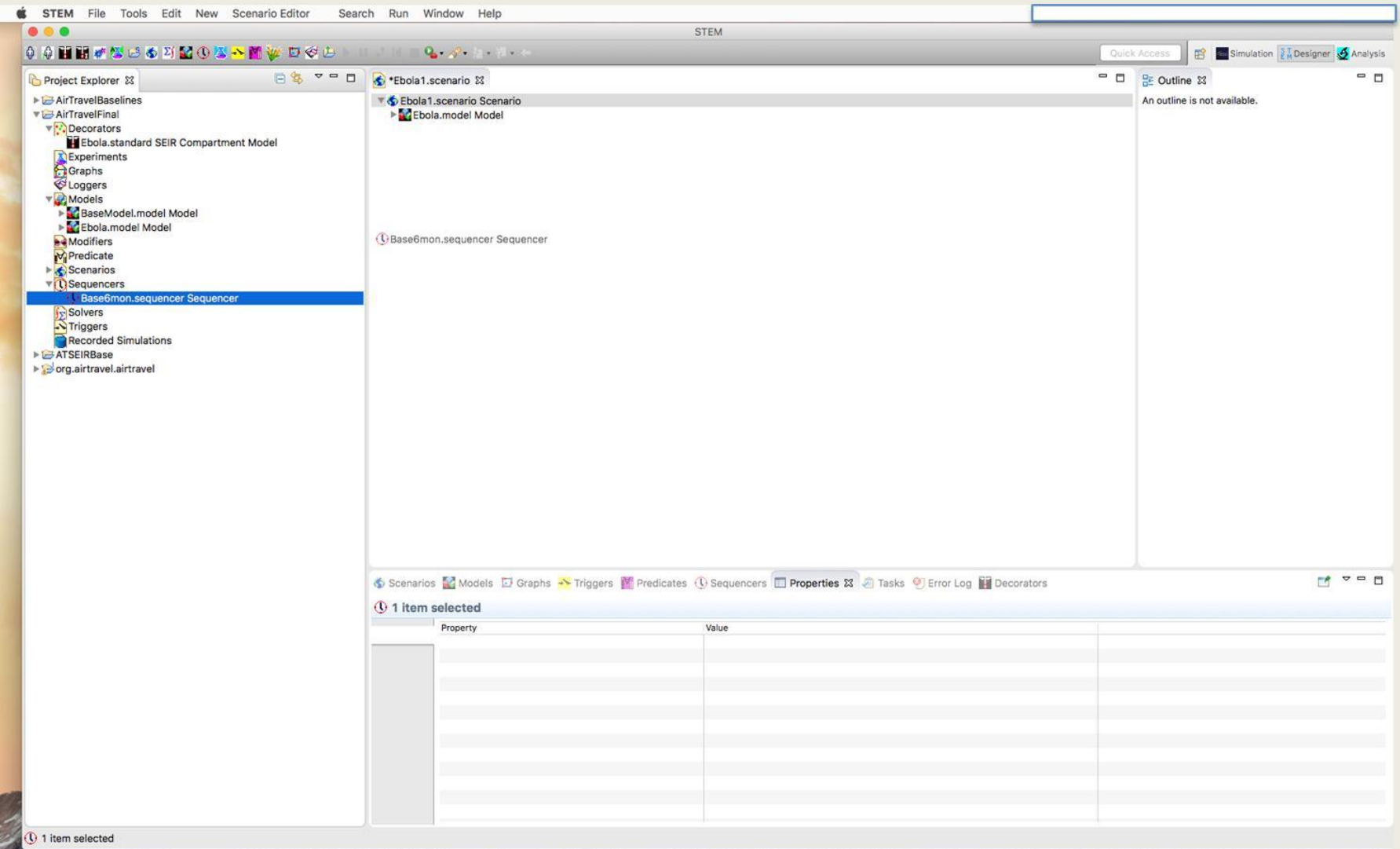
Base6mon.sequencer Sequencer

Outline

An outline is not available.

Property	Value

Now drag new sequencer to your scenario...from left side to right side



Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR C
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Mod
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

New

- Population Model
- Population Initializer
- Disease
- Infector / Inoculator**
- Model Generator Project
- Experiment
- Trigger
- Predicate
- Real-Time Sequencer
- Sequential Sequencer
- Scenario
- New Solver
- Model
- STEM Project
- Graph

STEM

Quick Access Simulation Designer Analysis

*Ebola1.scenario

- Ebola1.scenario Scenario
 - Ebola.model Model
 - Base6mon.sequencer Sequencer

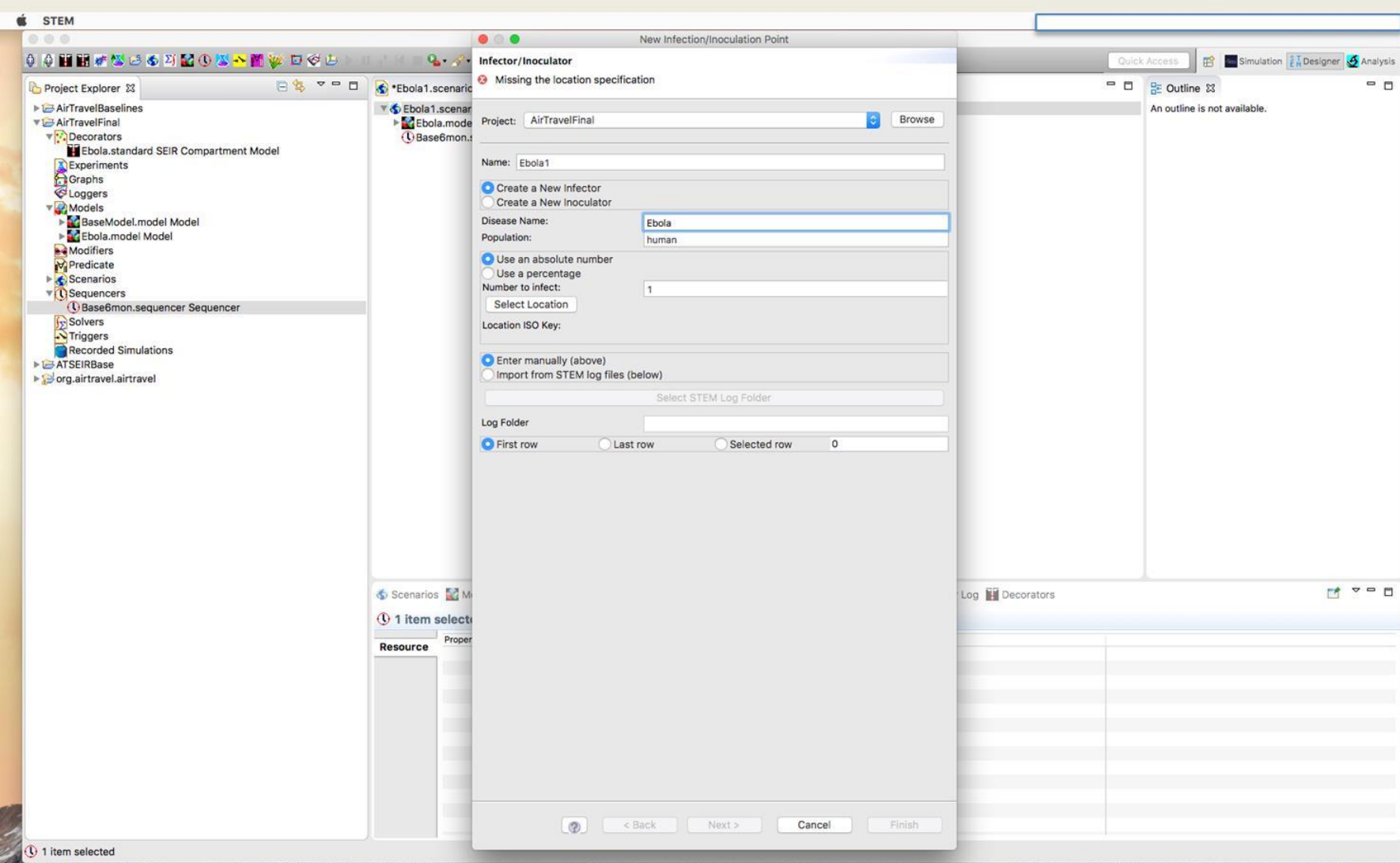
Outline

An outline is not available.

1 item selected

Resource	Property	Value

Now you need your infector, and where to infect the person. Under “New Infector”
--Disease name (must match the disease name you are using...here Ebola)



You name a new infector based on the scenario...this one will be Ebola1
Location...Queens, New York

The screenshot displays the 'New Infection/Inoculation Point' dialog box in the STEM software. The dialog is titled 'Infector/Inoculator' and features a warning icon with the text 'Missing the location specification'. The 'Project' field is set to 'AirTravelFinal'. The 'Name' field contains 'Ebola1'. The 'Disease Name' field contains 'Ebola' and the 'Population' field contains 'human'. The 'Number to infect' field contains '1'. The 'Location ISO Key' field is empty. The 'Log Folder' section has 'First row' selected. The background shows the Project Explorer with a tree view of models and scenarios, and the Outline pane on the right with the text 'An outline is not available.'

Select Location

The screenshot displays the STEM software interface with the 'New Infection/Inoculation Point' dialog box open. The dialog is titled 'Select a location to infect (or inoculate)' and is divided into three levels. Level 1 shows 'US-NY-36081' selected. Level 2 shows a list of counties in New York, with 'Queens County' highlighted. Level 3 is empty. The background shows the Project Explorer with a tree view of models and scenarios.

Project Explorer (Left Panel):

- AirTravelBaselines
- AirTravelFinal
- Decorators
 - Ebola.standard SEIR Compartment Model
- Experiments
- Graphs
- Loggers
- Models
 - BaseModel.model Model
 - Ebola.model Model
- Modifiers
- Predicate
- Scenarios
- Sequencers
 - Base6mon.sequencer Sequencer
- Solvers
- Triggers
- Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

New Infection/Inoculation Point Dialog (Center):

Project: AirTravelFinal

Name: Ebola1

Create a New Infection
 Create a New Inoculator

Disease Name: _____

Population: _____

Use an absolute number
 Use a percentage

Number to infect: _____

Select Location

Location ISO Key: _____

Enter manually (above)
 Import from STEM log file

Log Folder: First row

Select a location to infect (or inoculate)

Select Globally
 Select Within Project

ISO Key: US-NY-36081

Country: Level 1

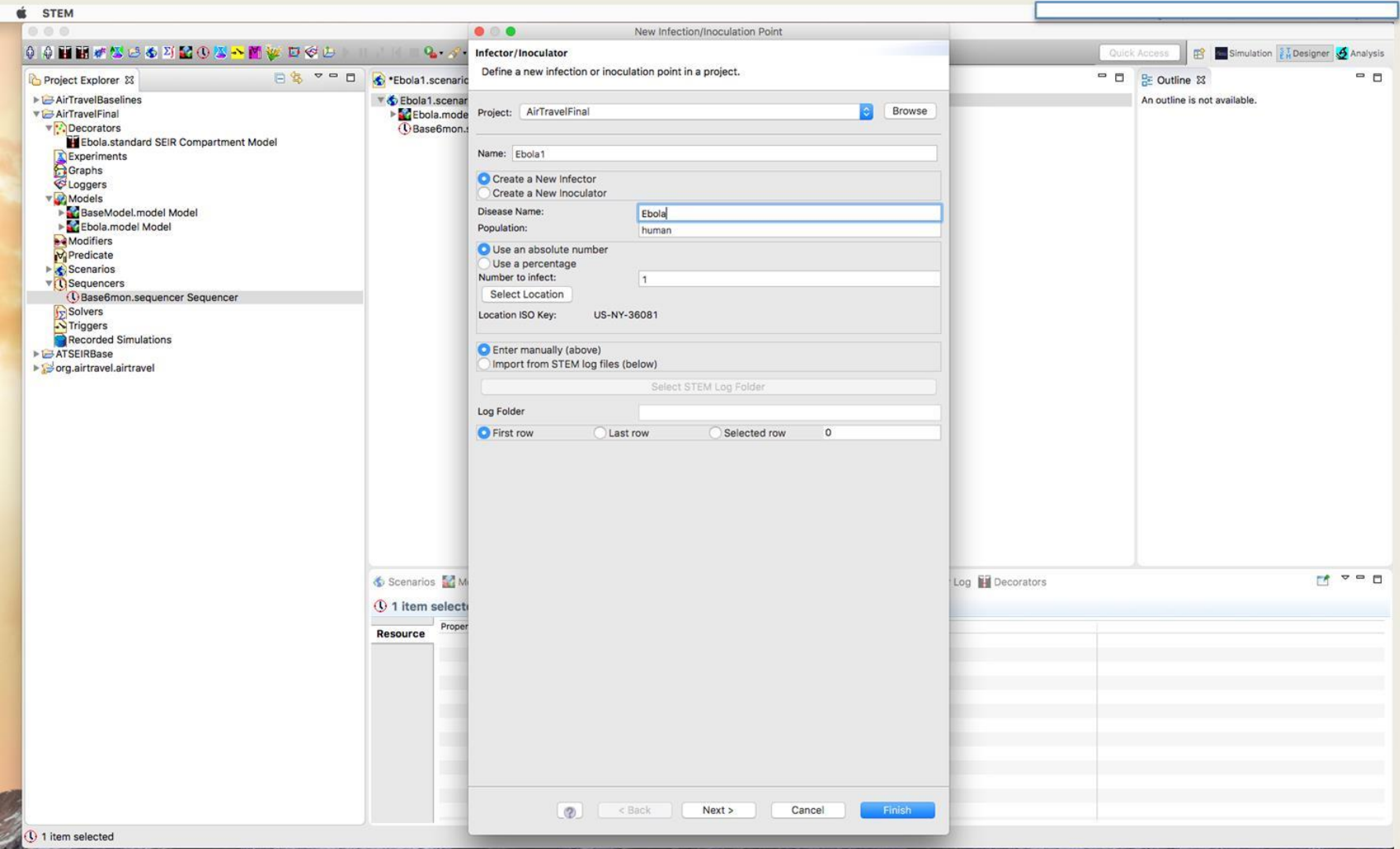
Level 2

Level 3

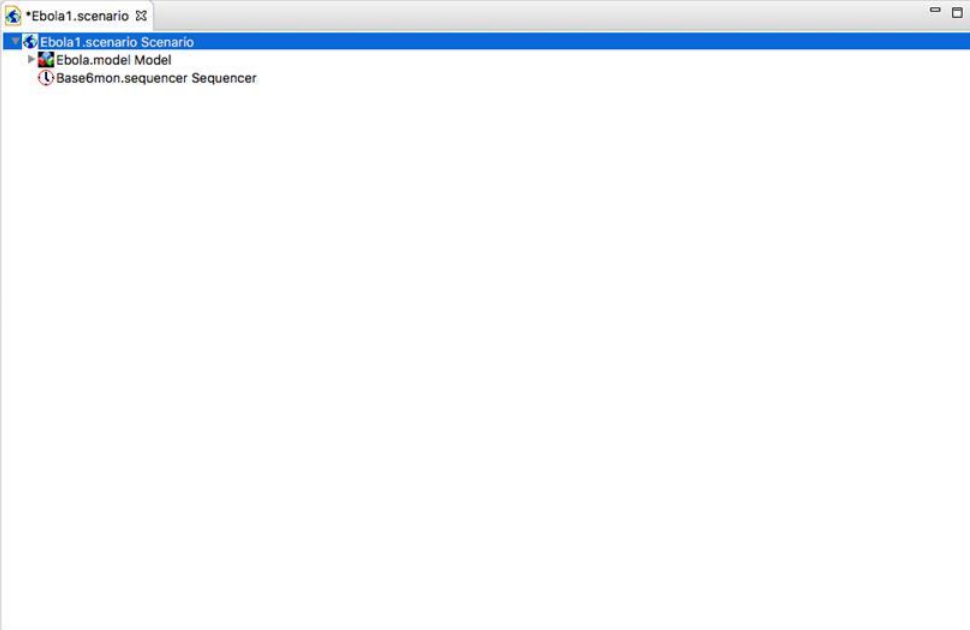
Queens County

Okay Cancel

Should come out as US-NY-36081-- Finish



- Project Explorer
- AirTravelBaselines
- AirTravelFinal
- Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
- Experiments
- Graphs
- Loggers
- Models
 - BaseModel.model Model
 - Ebola.model Model
- Modifiers
- Predicate
- Scenarios
- Sequencers
 - Base6mon.sequencer Sequencer
- Solvers
- Triggers
- Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

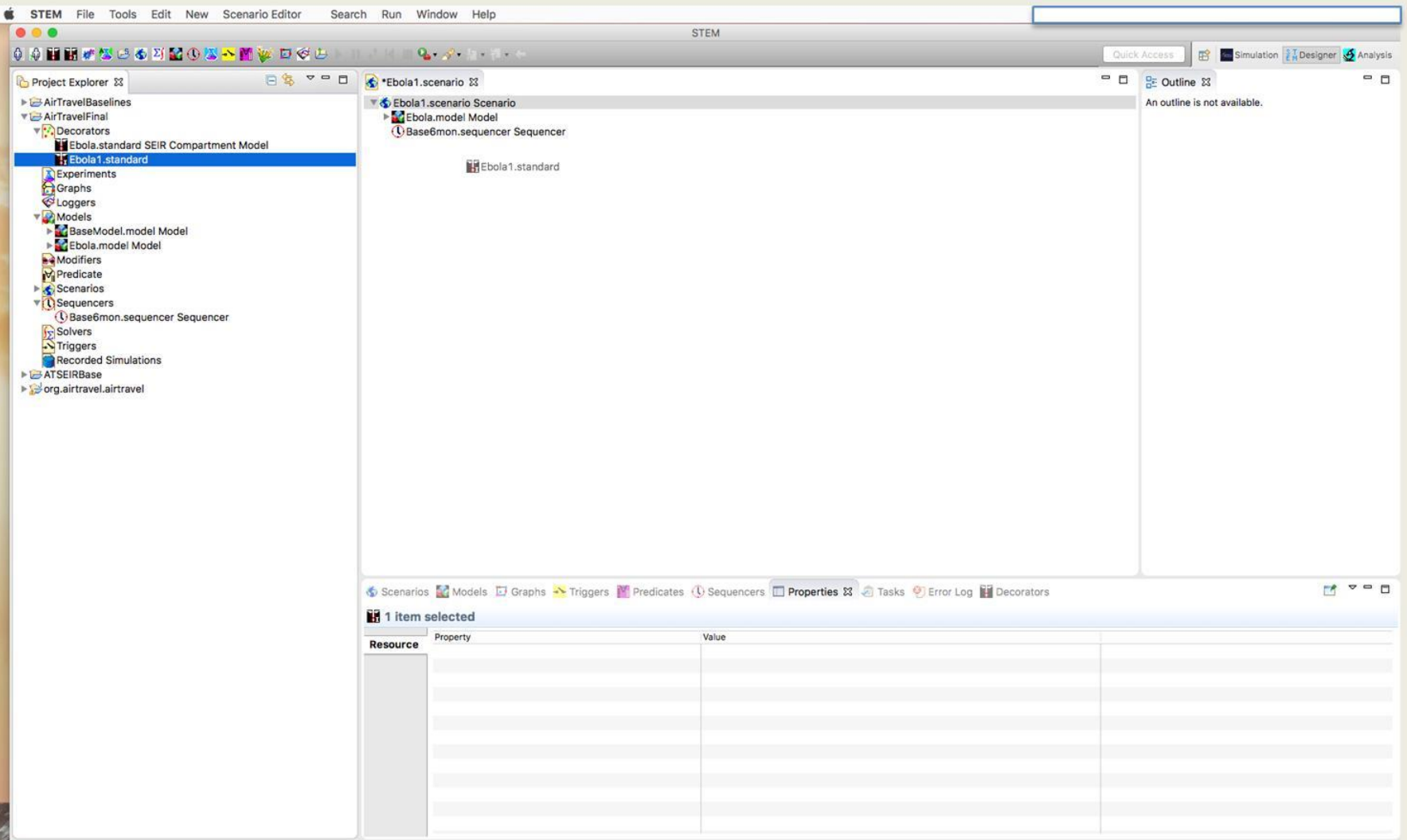


Outline

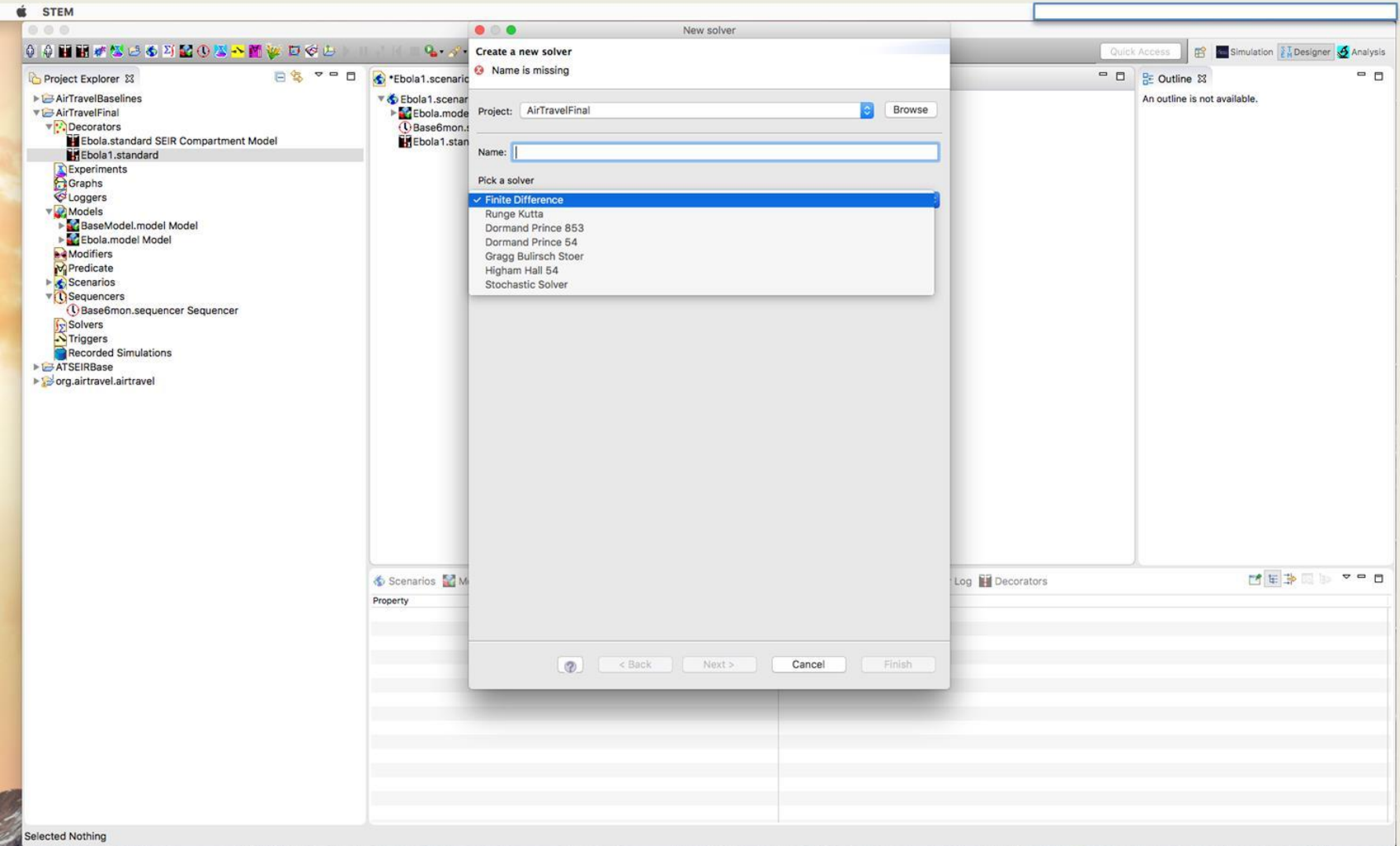
An outline is not available.

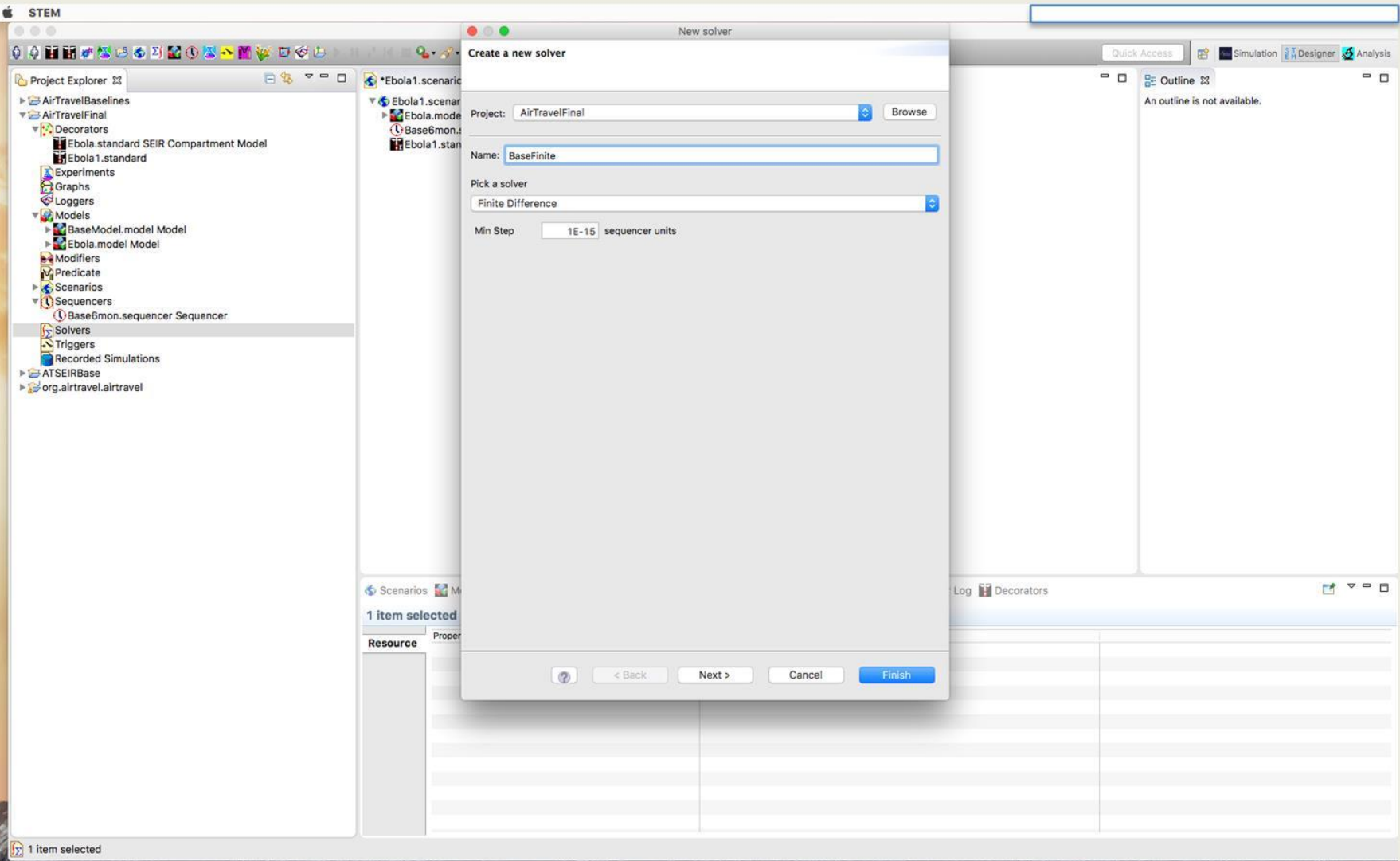
Property	Value

Now drag to your scenario...Ebola1 is the infector in the Decorators Folder... Don't confuse with the Ebola disease that was created...The infector has an "1" on it!



Will use Finite in this example





Now drag the solver to the scenario...

The screenshot shows the STEM software interface. The top menu bar includes 'STEM', 'File', 'Tools', 'Edit', 'New', 'Scenario Editor', 'Search', 'Run', 'Window', and 'Help'. The main workspace is divided into three panes:

- Project Explorer:** A tree view on the left showing a project structure. The 'Solvers' folder is expanded, and 'BaseFinite.f.d Solver' is selected.
- Scenario Editor:** A central pane showing the contents of '*Ebola1.scenario'. It contains a folder 'Ebola1.scenario Scenario' with sub-items 'Ebola.model Model', 'Base6mon.sequencer Sequencer', and 'Ebola1.standard', and a 'BaseFinite.f.d Solver'.
- Outline:** A pane on the right with the text 'An outline is not available.'

At the bottom, there is a toolbar with icons for 'Scenarios', 'Models', 'Graphs', 'Triggers', 'Predicates', 'Sequencers', 'Properties', 'Tasks', 'Error Log', and 'Decorators'. Below the toolbar is a 'Properties' table with the following structure:

1 item selected	
Property	Value

The status bar at the bottom left indicates '1 item selected'.

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers
 - BaseFinite.fd Solver
 - Triggers
 - Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

Ebola1.scenario Scenario

- Ebola.model Model
- Base6mon.sequencer Sequencer
- Ebola1.standard
- BaseFinite.fd Solver

Outline

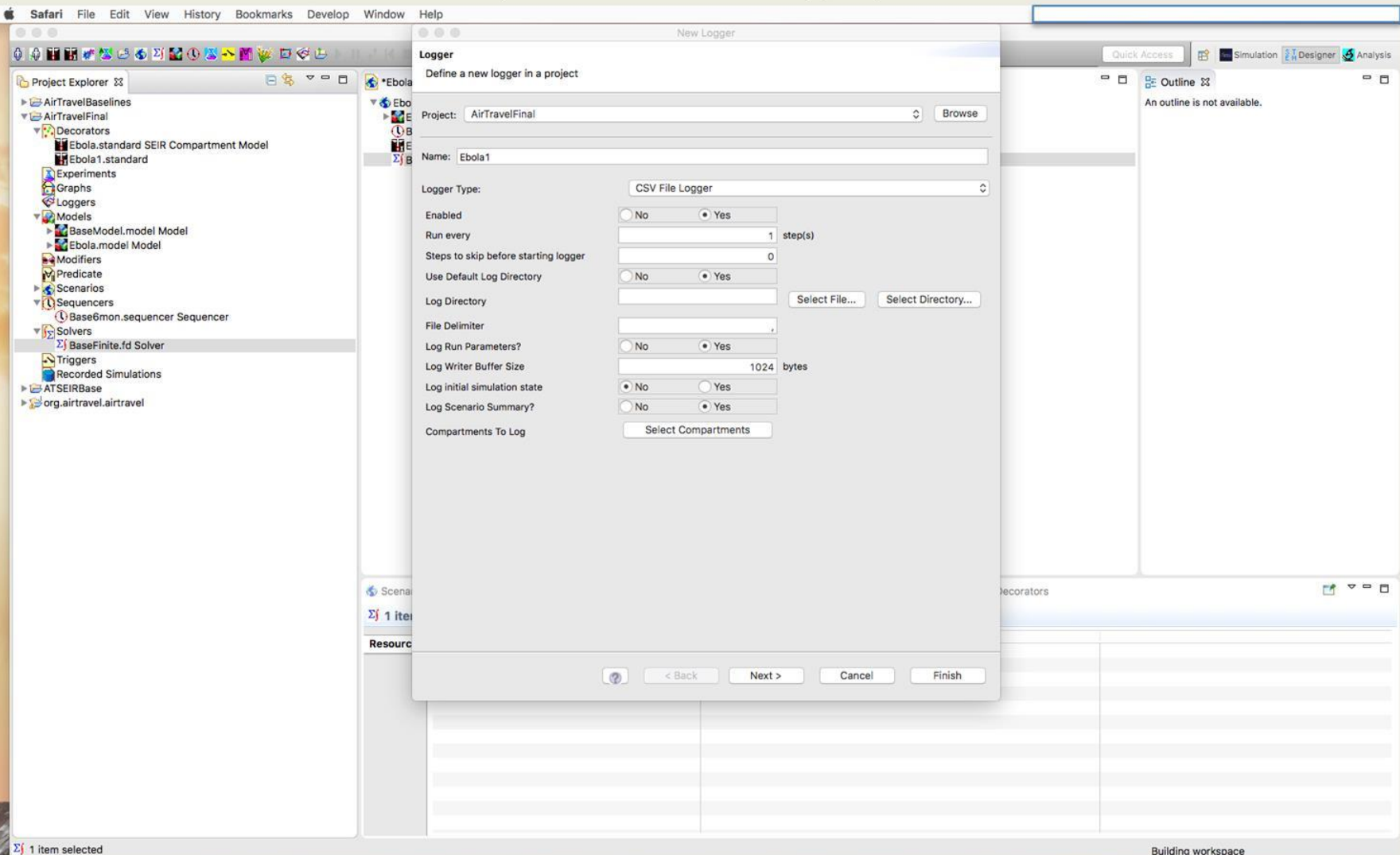
An outline is not available.

1 item selected

Resource	Property	Value

Now you need to add the Logger...Here you create the folder of the raw data. The directory under recorded simulations, wherever folder you put the STEM model on your computer is the easiest.

Note: make sure to put “YES” on log initial simulation state
Then select all the compartments in the “Appropriate Disease”



Select the “recorded simulation”, in the Folder that you call the STEM project...

The screenshot displays the STEM software interface with several windows open. The 'Project Explorer' on the left shows a tree view of the project structure, including folders like 'AirTravelFinal', 'Decorators', 'Experiments', 'Graphs', 'Loggers', 'Models', 'Modifiers', 'Predicates', 'Scenarios', 'Sequencers', 'Solvers', 'Triggers', and 'Recorded Simulations'. The 'New Logger' dialog box is open in the center, with the 'Project' field set to 'AirTravelFinal'. The 'Applications' file browser window is open in the foreground, showing a list of files and folders. A blue arrow points to the 'Recorded Simulations' folder within the 'AirTravelFinal' directory. The 'Recorded Simulations' folder is highlighted in blue. The file browser window also shows other folders like 'workspace', 'solvers', 'decorators', 'sequencers', 'scenarios', 'models', '.gml', '.project', '.version', 'experiments', 'graphs', 'loggers', 'modifiers', 'predicates', 'triggers', '.metadata', 'ATSEIRBase', 'AirTravelBaselines', 'org.airtravel.airtravel', 'configuration', 'plugins', 'readme', 'features', 'dropsins', 'STEM.app', 'artifacts.xml', 'p2', '.eclipseproduct', 'epi-v10.html', 'notice.html', 'Dropbox.app', and 'Utilities'.

Name	Date Modified	Size	Kind
stemApr21	Today, 12:05 PM	--	Folder
workspace	Today, 12:40 PM	--	Folder
AirTravelFinal	Today, 12:40 PM	--	Folder
solvers	Today, 3:31 PM	--	Folder
decorators	Today, 3:05 PM	--	Folder
sequencers	Today, 2:55 PM	--	Folder
scenarios	Today, 2:52 PM	--	Folder
models	Today, 2:50 PM	--	Folder
.gml	Today, 12:40 PM	--	Folder
.project	Today, 12:40 PM	254 bytes	TextEd...ument
.version	Today, 12:40 PM	21 bytes	TextEd...ument
experiments	Today, 12:40 PM	--	Folder
graphs	Today, 12:40 PM	--	Folder
loggers	Today, 12:40 PM	--	Folder
modifiers	Today, 12:40 PM	--	Folder
predicates	Today, 12:40 PM	--	Folder
Recorded Simulations	Today, 12:40 PM	--	Folder
triggers	Today, 12:40 PM	--	Folder
.metadata	Sep 30, 2016, 9:30 PM	--	Folder
ATSEIRBase	Sep 30, 2016, 9:16 PM	--	Folder
AirTravelBaselines	Apr 21, 2016, 10:28 PM	--	Folder
org.airtravel.airtravel	Apr 21, 2016, 3:00 PM	--	Folder
configuration	Today, 12:05 PM	--	Folder
plugins	Apr 21, 2016, 2:56 PM	--	Folder
readme	Apr 21, 2016, 2:56 PM	--	Folder
features	Apr 14, 2016, 5:07 PM	--	Folder
dropsins	Apr 14, 2016, 5:07 PM	--	Folder
STEM.app	Apr 14, 2016, 5:07 PM	85 KB	Application
artifacts.xml	Apr 14, 2016, 5:07 PM	96 KB	XML document
p2	Apr 14, 2016, 5:06 PM	--	Folder
.eclipseproduct	Apr 14, 2016, 5:01 PM	123 bytes	TextEd...ument
epi-v10.html	Jan 28, 2015, 9:08 AM	13 KB	HTML
notice.html	Jan 28, 2015, 9:08 AM	9 KB	HTML
Dropbox.app	Today, 11:47 AM	180.9 MB	Application
Utilities	Nov 10, 2016, 7:23 PM	--	Folder
Adobe Flash Player Install Manager.app	Nov 10, 2016, 7:23 PM	1.2 MB	Application
Activity Monitor.app	Nov 1, 2016, 10:43 PM	11.3 MB	Application
AirPort Utility.app	Nov 1, 2016, 10:43 PM	186.8 MB	Application

STEM

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
- Experiments
- Graphs
- Loggers
- Models
 - BaseModel.model Model
 - Ebola.model Model
- Modifiers
- Predicate
- Scenarios
- Sequencers
 - Base6mon.sequencer Sequencer
- Solvers
 - BaseFinite.fd Solver
- Triggers
- Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

1 item selected

New Logger

Logger

Define a new logger in a project

Project: AirTravelFinal Browse

Name: Ebola1

Logger Type: CSV File Logger

Enabled: No Yes

Run every: step(s)

Steps to skip before starting logger:

Use Default Log Directory: No Yes

Log Directory: platform:/resource/AirTravelFinal/R Select File... Select Directory...

File Delimiter:

Log Run Parameters?: No Yes

Log Writer Buffer Size: bytes

Log initial simulation state: No Yes

Log Scenario Summary?: No Yes

Compartments To Log: Select Compartments

? < Back Next > Cancel Finish

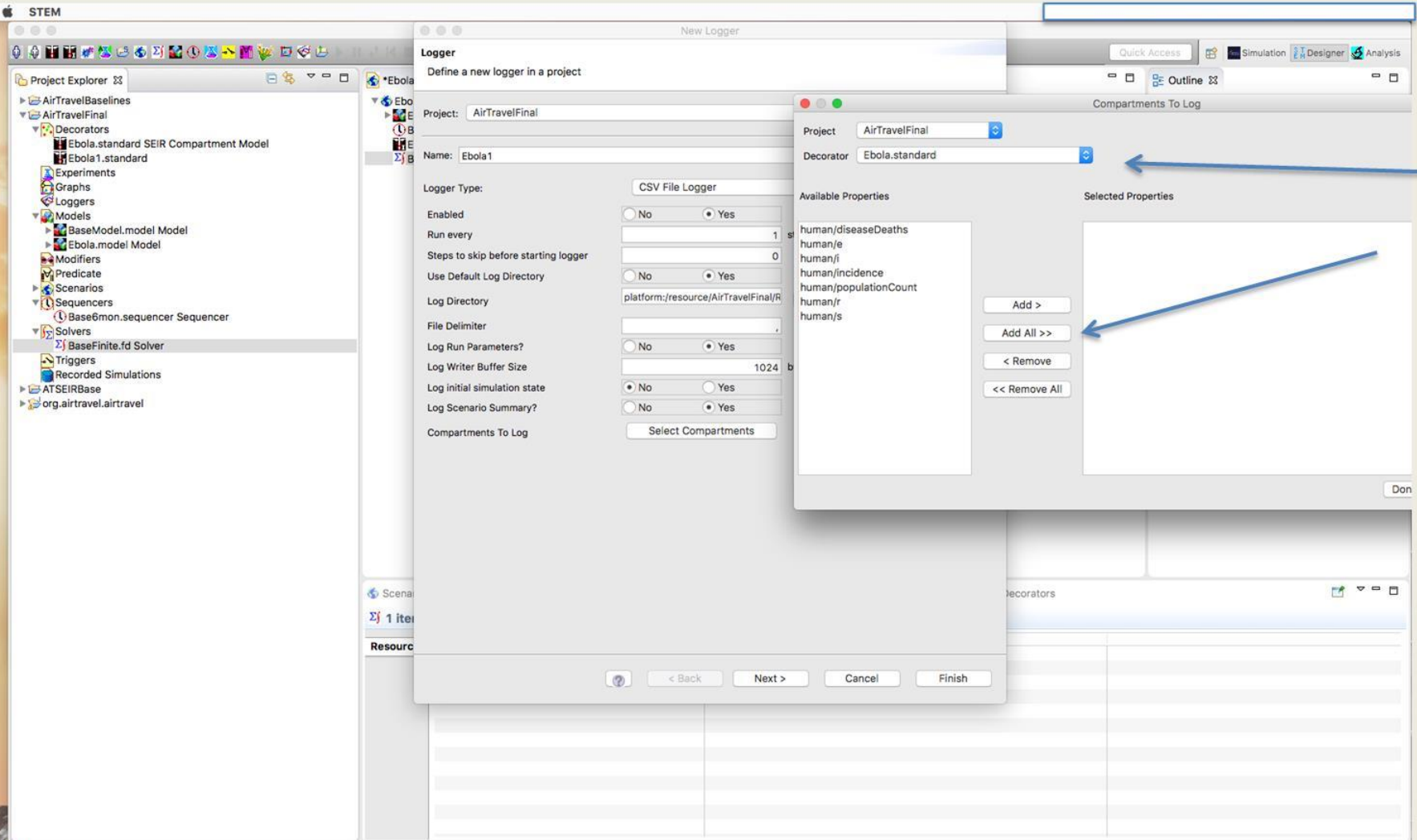
Quick Access

Simulation Designer Analysis

Outline

An outline is not available.





STEM

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers
 - BaseFinite.fd Solver
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

New Logger

Define a new logger in a project

Project: AirTravelFinal

Name: Ebola1

Logger Type: CSV File Logger

Enabled: No Yes

Run every: 1 step

Steps to skip before starting logger: 0

Use Default Log Directory: No Yes

Log Directory: platform:/resource/AirTravelFinal/R

File Delimiter: ,

Log Run Parameters?: No Yes

Log Writer Buffer Size: 1024 bytes

Log initial simulation state: No Yes

Log Scenario Summary?: No Yes

Compartment To Log:

Available Properties

Selected Properties

- AirTravelFinal/Ebola.standard:human/diseaseDeaths
- AirTravelFinal/Ebola.standard:human/e
- AirTravelFinal/Ebola.standard:human/i
- AirTravelFinal/Ebola.standard:human/incidence
- AirTravelFinal/Ebola.standard:human/populationCount
- AirTravelFinal/Ebola.standard:human/r
- AirTravelFinal/Ebola.standard:human/s

Simulation Designer Analysis

Quick Access

Outline

An outline is not available.

Compartments To Log

Decorators

STEM

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
 - Experiments
 - Graphs
 - Loggers
 - Models
 - BaseModel.model Model
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers
 - BaseFinite.fd Solver
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

New Logger

Define a new logger in a project

Project: AirTravelFinal Browse

Name: Ebola1

Logger Type: CSV File Logger

Enabled: No Yes

Run every: 1 step(s)

Steps to skip before starting logger: 0

Use Default Log Directory: No Yes

Log Directory: platform:/resource/AirTravelFinal/R Select File... Select Directory...

File Delimiter: .

Log Run Parameters?: No Yes

Log Writer Buffer Size: 1024 bytes

Log initial simulation state: No Yes

Log Scenario Summary?: No Yes

Compartments To Log: Select Compartments

? < Back Next > Cancel Finish

Quick Access

Simulation Designer Analysis

Outline

An outline is not available.

Decorators

- Project Explorer
 - AirTravelBaselines
 - Decorators
 - Experiments
 - Graphs
 - Loggers
 - Models
 - Baselines.model Model
 - EbolaBaseline.model Model
 - H1N1Baseline.model Model
 - Plague.model Model
 - SBase1.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - EbolaBaseline 1.scenario Scenario
 - BaselineTime.sequencer Sequencer
 - BaselineSolve.fd Solver
 - EbolaBaseline.model Model
 - Baselines.model Model
 - Ebola.standard Air Travel
 - EbolaBaseline 1.logger CSV File Logger
 - EbolaBaseline 1.standard
 - EbolaBaseline 10.scenario Scenario
 - H1N1Baseline 1.scenario Scenario
 - H1N1Baseline 10.scenario Scenario
 - PlagueBaseline 1.scenario Scenario
 - PlagueBaseline 10.scenario Scenario
 - PlagueBaseline 3.scenario Scenario
 - SARSBaseline 1.scenario Scenario
 - SARSBaseline 10.scenario Scenario
 - Sequencers
 - BaselineTime.sequencer Sequencer
 - Solvers
 - Triggers
 - Recorded Simulations
 - AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola 1.standard
 - Experiments
 - Graphs
 - Loggers
 - Ebola 1.logger CSV File Logger
 - Models
 - BaseModel.model Model
 - Ebola.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers

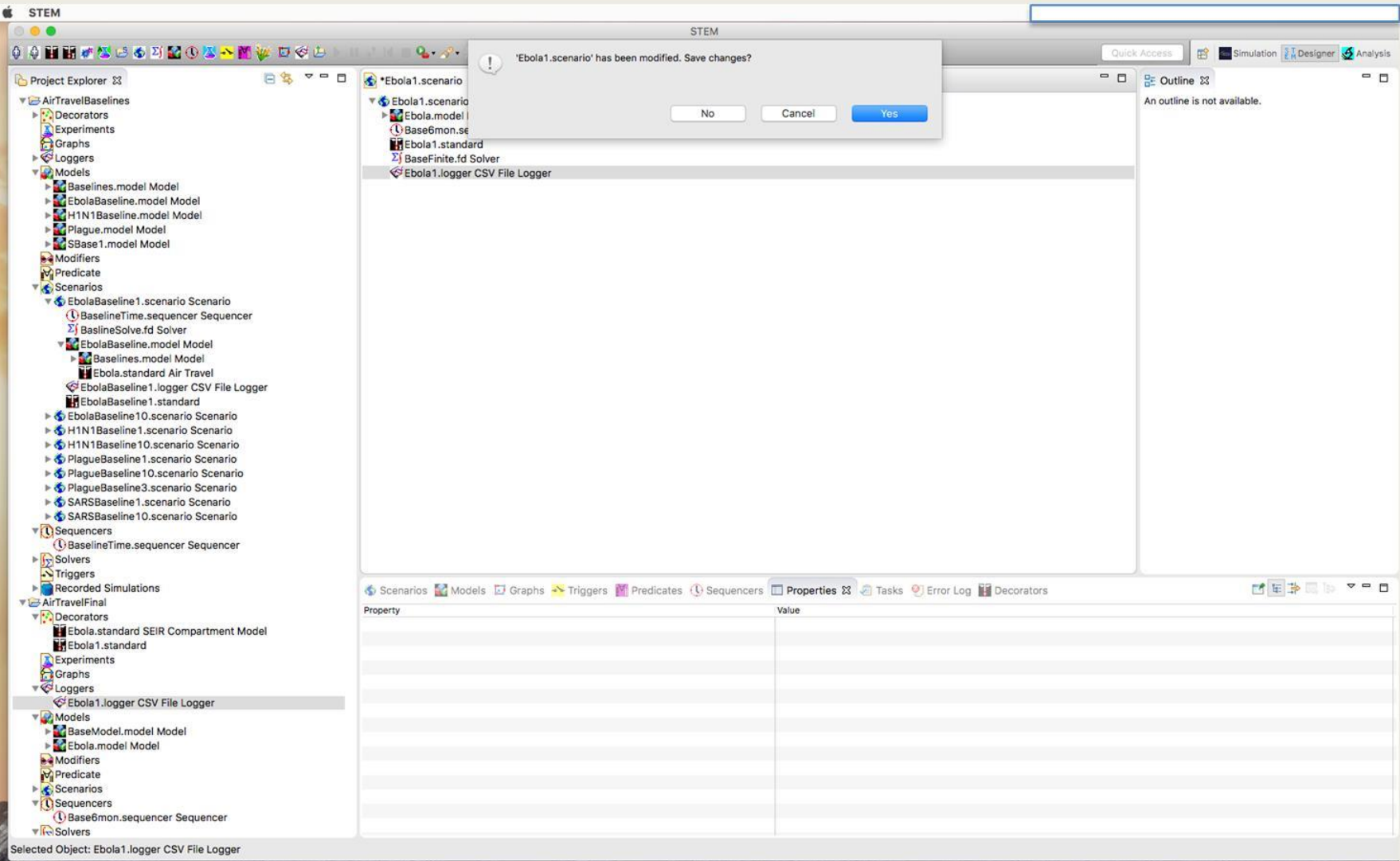
- *Ebola1.scenario
 - Ebola1.scenario Scenario
 - Ebola.model Model
 - Base6mon.sequencer Sequencer
 - Ebola 1.standard
 - BaseFinite.fd Solver
 - Ebola 1.logger CSV File Logger

Outline
An outline is not available.

Property	Value

Selected Object: Ebola 1.logger CSV File Logger

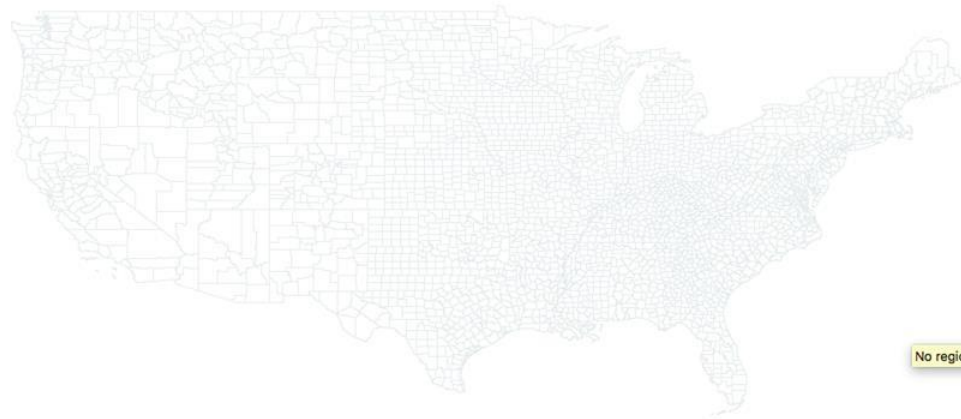
Close and it will save...



Now you will come to this screen...pause it (Yellow pause button)---center the US, Enlarge, then you can continue with the play button, you can also change the GAIN Value to show the values better

The screenshot displays a software application window titled "STEM". The interface is divided into several sections:

- Menu Bar:** File, Tools, Edit, New, Search, Run, Window, Help.
- Toolbar:** Contains various icons for navigation and simulation control.
- Graph Map:** The main workspace shows a map of the United States with a network overlay. A button "Add Another View" is located in the top left of this panel. The top right corner of the panel displays "Ebola1 | Linear Scale | Gain x1.0".
- Simulation Control:** Located at the bottom left, it shows a progress bar at 5% and a status of "Paused". It includes buttons for play, pause, and stop.
- Edges:** A panel on the right side of the simulation control area with a dropdown menu.
- Time Series:** A panel at the bottom right showing a plot and a "remove" button.



Now Displaying

- Ebola.standard SEIR Compartment Model
- human
- Labels Colors Mapping
- I

Edges

-

Simulation Control Project Explorer Scenarios

[2] Ebola1

Progress : 5%

Status : Paused

[10] Time : Sat Sep 10 12:00:00 EDT 2016

▶ ⏸ ⏪ ⏩ ⏹

Time Series Phase Space

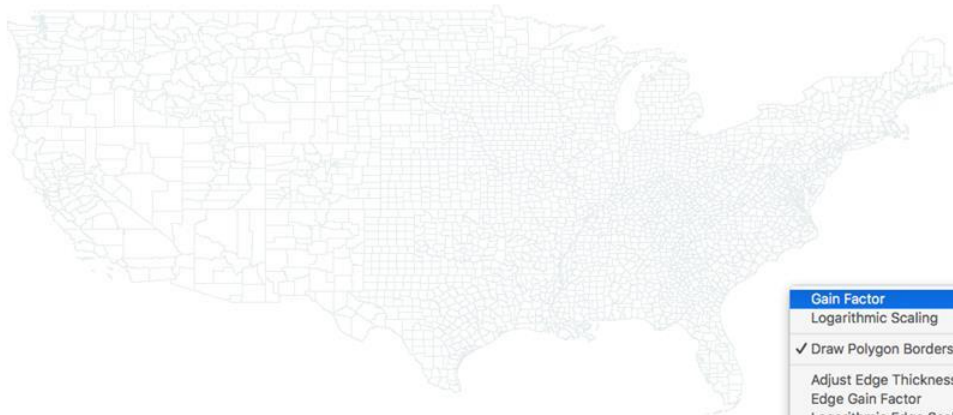
Now Displaying :

-
- remove

Graph Map

Add Another View

Ebola1 | Linear Scale | Gain x1.0



- Gain Factor ▶ 0.000001
- Logarithmic Scaling 0.000001
- 0.00001
- 0.0001
- 0.001
- 0.01
- 0.1
- ✓ 1
- 10
- 100
- 1,000
- 10,000
- 100,000
- 1,000,000

- ✓ Draw Polygon Borders
- Adjust Edge Thickness ▶
- Edge Gain Factor
- Logarithmic Edge Scaling
- Reset View
- Reset Options
- ✓ Show Options

Now Displaying

- Ebola.standard SEIR Compartment Model
- human
- Labels Colors Mapping
- I

Edges

Simulation Control Project Explorer Scenarios

Time Series Phase Space

[2] Ebola1

Progress : 5%

Status : Paused

[10] Time : Sat Sep 10 12:00:00 EDT 2016

▶ || ◀ ⏪ ⏩ ⏹

Now Displaying :

remove



- Gain Factor ▶ 0.000001
- Logarithmic Scaling 0.000001
- 0.00001
- 0.0001
- 0.001
- 0.01
- 0.1
- 1
- 10
- 100
- 1,000
- 10,000
- 100,000
- 1,000,000

Now Displaying

- Ebola.standard SEIR Compartment Model
- human
- Labels Colors Mapping
- |

Edges

-

Simulation Control

[2] Ebola1

Progress : 5%

Status : Paused

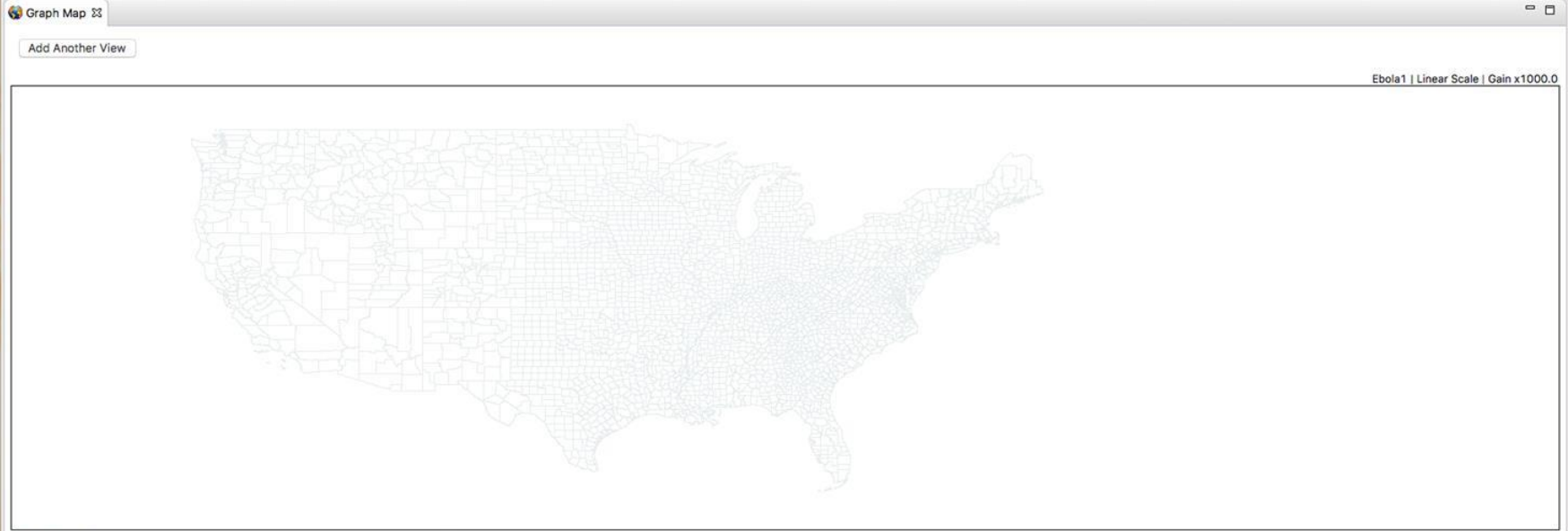
[10] Time : Sat Sep 10 12:00:00 EDT 2016

▶ || ◀ ⏏

Time Series

Now Displaying :

remove



Now Displaying

Ebola.standard SEIR Compartment Model

human

Labels Colors Mapping

I

Edges

Simulation Control Project Explorer Scenarios

Time Series Phase Space

[2] Ebola1

Progress : 5%

Status : Paused

[10] Time : Sat Sep 10 12:00:00 EDT 2016

Start the simulation

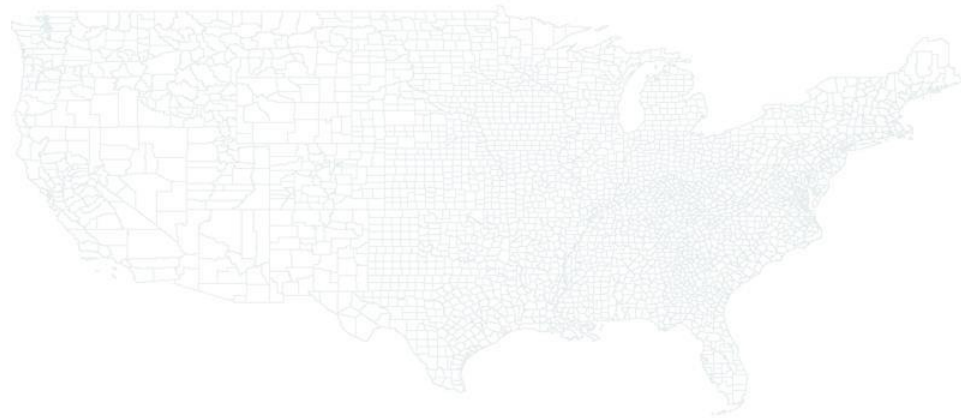
Now Displaying :

remove

Graph Map

Add Another View

Ebola1 | Linear Scale | Gain x1000.0



Now Displaying

- Ebola.standard SEIR Compartment Model
- human
- Labels Colors Mapping
- I

Edges

- [Empty dropdown menu]

Simulation Control Project Explorer Scenarios

[2] Ebola1

Progress : 18%

Status : Paused

[32] Time : Sun Oct 02 12:00:00 EDT 2016

[Play, Pause, Stop, Refresh, Reset buttons]

Time Series Phase Space

Now Displaying :

- [Empty dropdown menu]
- [Empty dropdown menu]
- remove

Now go find the folder of recorded simulations, and now all your data is stored...Ebola, you have deaths, incidence, exposed, susceptible, etc It can be opened with Excel.

Finder File Edit View Go Window Help

Applications

Quick Access Simulation Designer Analysis

Outline An outline is not available.

Name	Date Modified	Size	Kind
stemApr21	Today, 12:05 PM	--	Folder
workspace	Today, 12:40 PM	--	Folder
AirTravelFinal	Today, 3:38 PM	--	Folder
Recorded Simulations	Today, 3:46 PM	--	Folder
Ebola1-2-2016-11-13T15/43/24	Today, 3:46 PM	--	Folder
Ebola	Today, 3:46 PM	--	Folder
human	Today, 3:43 PM	--	Folder
Disease Deaths_2.csv	Today, 3:45 PM	12 MB	comm...values
I_2.csv	Today, 3:45 PM	12.1 MB	comm...values
R_2.csv	Today, 3:45 PM	12 MB	comm...values
E_2.csv	Today, 3:45 PM	12.1 MB	comm...values
Incidence_2.csv	Today, 3:45 PM	12.1 MB	comm...values
Population Count_2.csv	Today, 3:45 PM	10.3 MB	comm...values
S_2.csv	Today, 3:45 PM	10.4 MB	comm...values
runparameters.csv	Today, 3:43 PM	371 bytes	comm...values
ScenarioLog.html	Today, 3:43 PM	206 KB	HTML
loggers	Today, 3:40 PM	--	Folder
solvers	Today, 3:31 PM	--	Folder
decorators	Today, 3:05 PM	--	Folder
sequencers	Today, 2:55 PM	--	Folder
scenarios	Today, 2:52 PM	--	Folder
models	Today, 2:50 PM	--	Folder
experiments	Today, 12:40 PM	--	Folder
graphs	Today, 12:40 PM	--	Folder
modifiers	Today, 12:40 PM	--	Folder
predicates	Today, 12:40 PM	--	Folder
triggers	Today, 12:40 PM	--	Folder
ATSEIRBase	Sep 30, 2016, 9:16 PM	--	Folder
AirTravelBaselines	Apr 21, 2016, 10:28 PM	--	Folder
org.airtravel.airtravel	Apr 21, 2016, 3:00 PM	--	Folder
configuration	Today, 12:05 PM	--	Folder
plugins	Apr 21, 2016, 2:56 PM	--	Folder
readme	Apr 21, 2016, 2:56 PM	--	Folder
features	Apr 14, 2016, 5:07 PM	--	Folder
dropins	Apr 14, 2016, 5:07 PM	--	Folder
STEM.app	Apr 14, 2016, 5:07 PM	85 KB	Application
artifacts.xml	Apr 14, 2016, 5:07 PM	96 KB	XML document
p2	Apr 14, 2016, 5:06 PM	--	Folder
enl-id0.html	Jan 28, 2015, 9:08 AM	13 KB	HTML

1 item selected

Add the parameters

New Disease

Define a new disease in a project.

Project: AirTravelFinal

Name: H1N1

Disease Model: SEIR Compartment Model

Add stochastic noise: No Yes

Seed: 1

Disease Name: H1N1

Population: human

Time Period (TP): 86400000 ms

Frequency Dependent: No Yes

Reference Pop Density: 100 1/SQ KM

Road.Net.Inf.Proportion: 0.01 fraction per Road

Characteristic Mixing Distance: 2.25 km

Transmission Rate (β): 0.245 [1/time]

Non-Linearity Coefficient: 1.0 ≥ 0.0

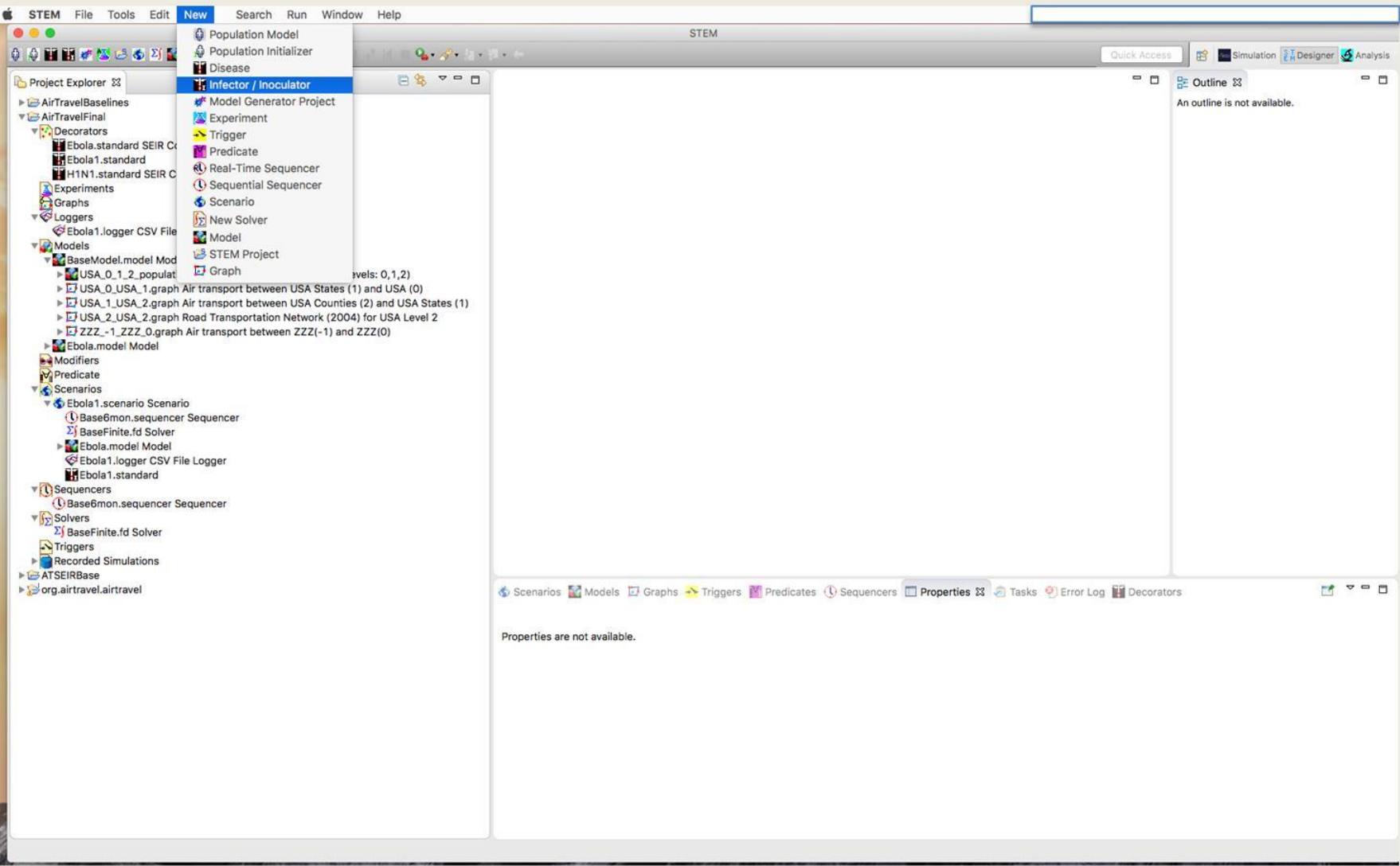
Infectious Recovery Rate (γ): 0.10 [1/time]

Infectious Mortality Rate (δ): 0.00016 [1/time]

Immunity Loss Rate (α): 0.002 [1/time]

Incubation Rate (ϵ): 0.25 [1/time]

Need new infector because it is 10 people



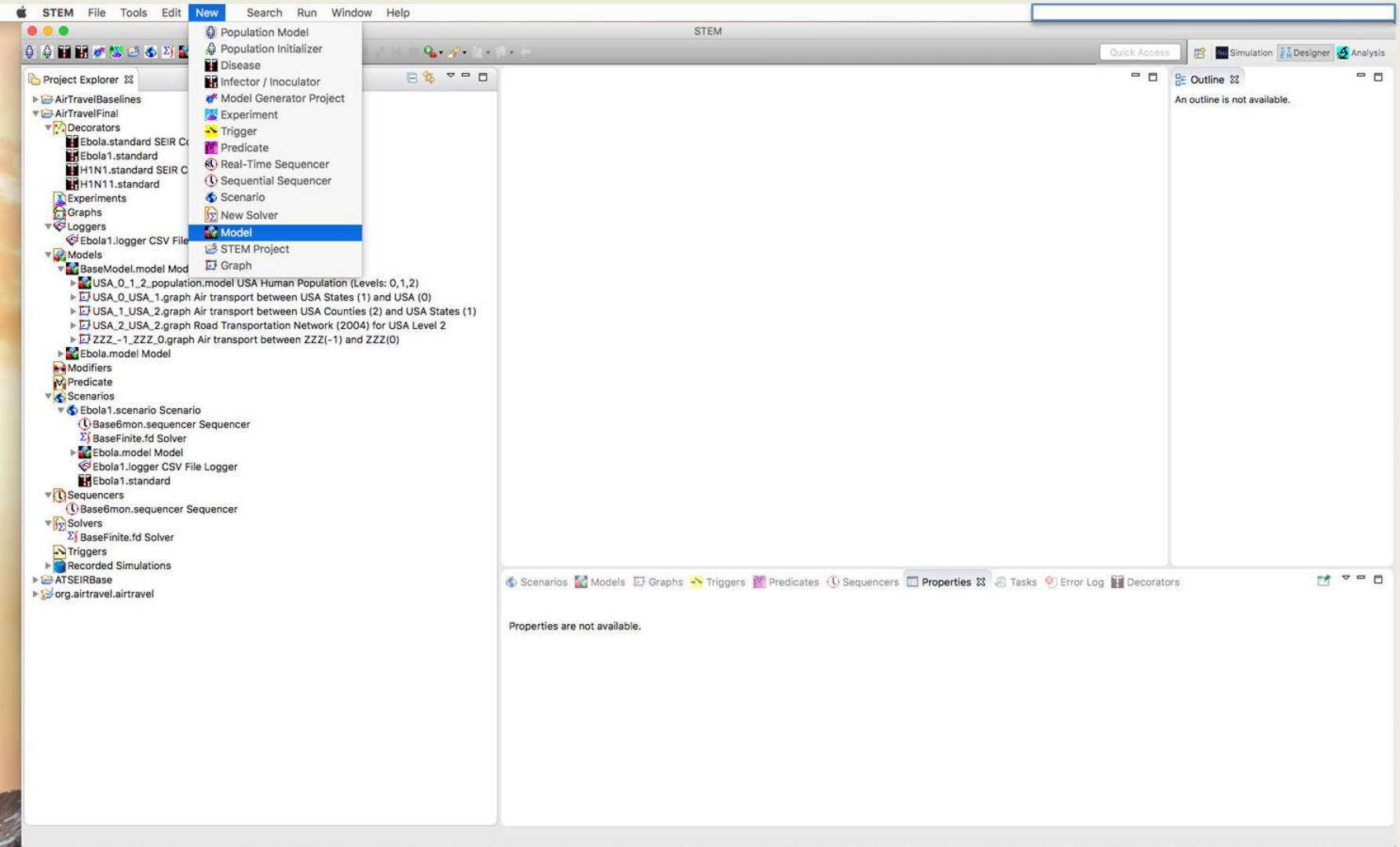
Make sure that the disease matches the disease name you need.
10 people infected, in NY Queens, 36081

The screenshot displays the 'New Infection/Inoculation Point' dialog box in the STEM software. The dialog is titled 'Infector/Inoculator' and contains the following fields and options:

- Project: AirTravelFinal
- Name: H1N1
- Disease Name: H1N1
- Population: human
- Number to infect: 10
- Location ISO Key: US-NY-36081

Three blue arrows point to the Name, Number to infect, and Location ISO Key fields. The background shows a Project Explorer with a tree view of models and scenarios.

Now make the Flu model (you have already created the baseline that you can reuse)



Project Explorer

- AirTravelBaselines
 - AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
 - H1N1.standard SEIR Compartment Model
 - H1N11.standard
 - Experiments
 - Graphs
 - Loggers
 - Ebola1.logger CSV File Logger
 - Models
 - BaseModel.model Model**
 - Ebola.model Model
 - H1N1.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Ebola1.scenario Scenario
 - Base6mon.sequencer Sequencer
 - BaseFinite.fd Solver
 - Ebola.model Model
 - Ebola1.logger CSV File Logger
 - Ebola1.standard
- Sequencers
 - Base6mon.sequencer Sequencer
- Solvers
 - BaseFinite.fd Solver
- Triggers
- Recorded Simulations
- ATSEIRBase
- org.airtravel.airtravel

H1N1.model

- H1N1.model Model
- BaseModel.model Model

Outline

An outline is not available.

1 item selected

Property	Value

Project Explorer

- AirTravelBaselines
- AirTravelFinal
 - Decorators
 - Ebola.standard SEIR Compartment Model
 - Ebola1.standard
 - H1N1.standard SEIR Compartment Model**
 - NewH1N110.standard
 - Experiments
 - Graphs
 - Loggers
 - Ebola1.logger CSV File Logger
 - Flu10.logger CSV File Logger
 - Models
 - BaseModel.model Model
 - Ebola.model Model
 - BaseModel.model Model
 - Ebola.standard SEIR Compartment Model
 - H1N1.model Model
 - BaseModel.model Model
 - Modifiers
 - Predicate
 - Scenarios
 - Ebola1.scenario Scenario
 - Base6mon.sequencer Sequencer
 - BaseFinite.fd Solver
 - Ebola.model Model
 - Ebola1.logger CSV File Logger
 - Ebola1.standard
 - H1N110.scenario Scenario
 - Sequencers
 - Base6mon.sequencer Sequencer
 - Solvers
 - BaseFinite.fd Solver
 - Triggers
 - Recorded Simulations
 - ATSEIRBase
 - org.airtravel.airtravel

*H1N110.scenario *H1N1.model

- H1N1.model Model
 - BaseModel.model Model
 - H1N1.standard SEIR Compartment Model**

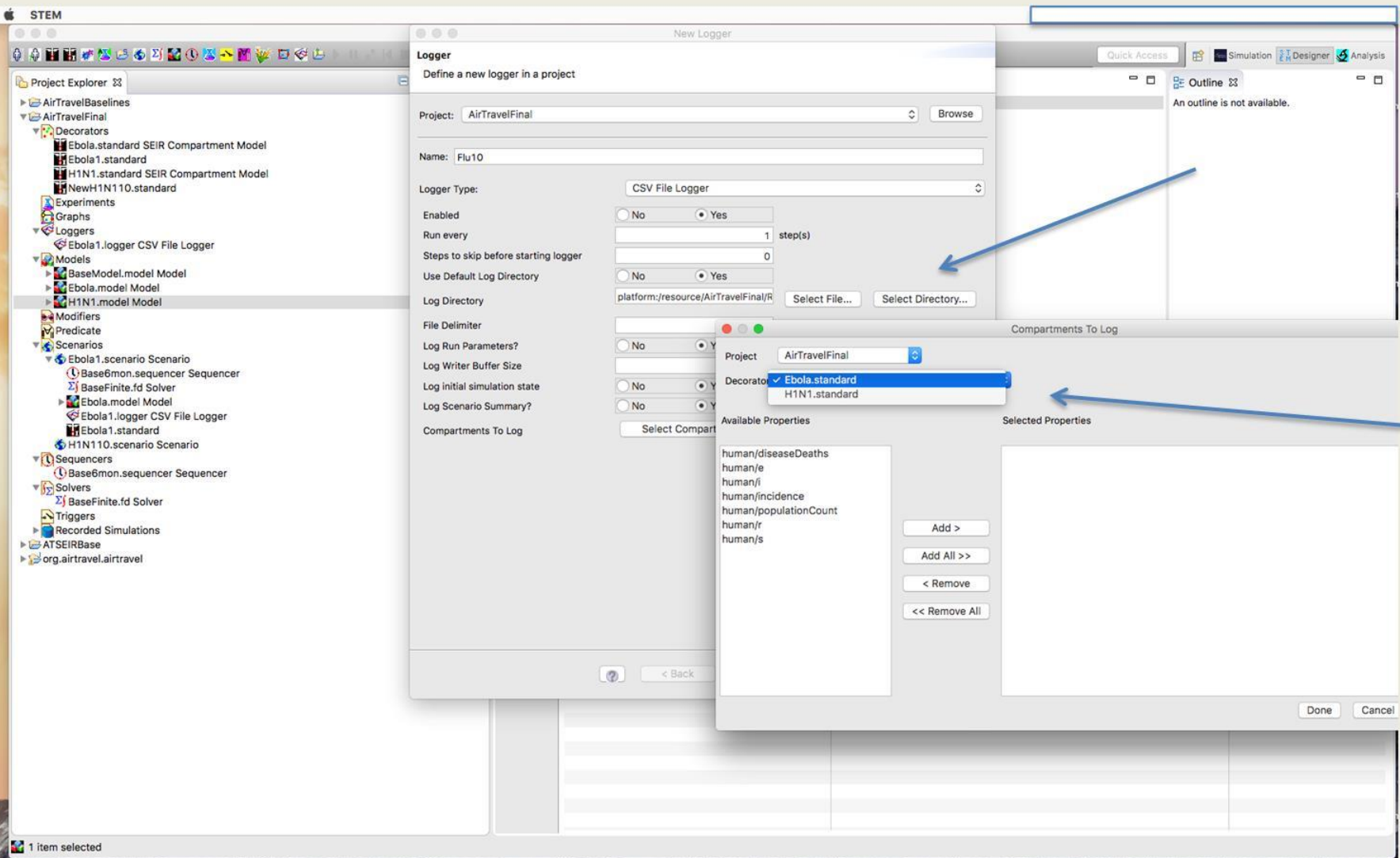
Outline

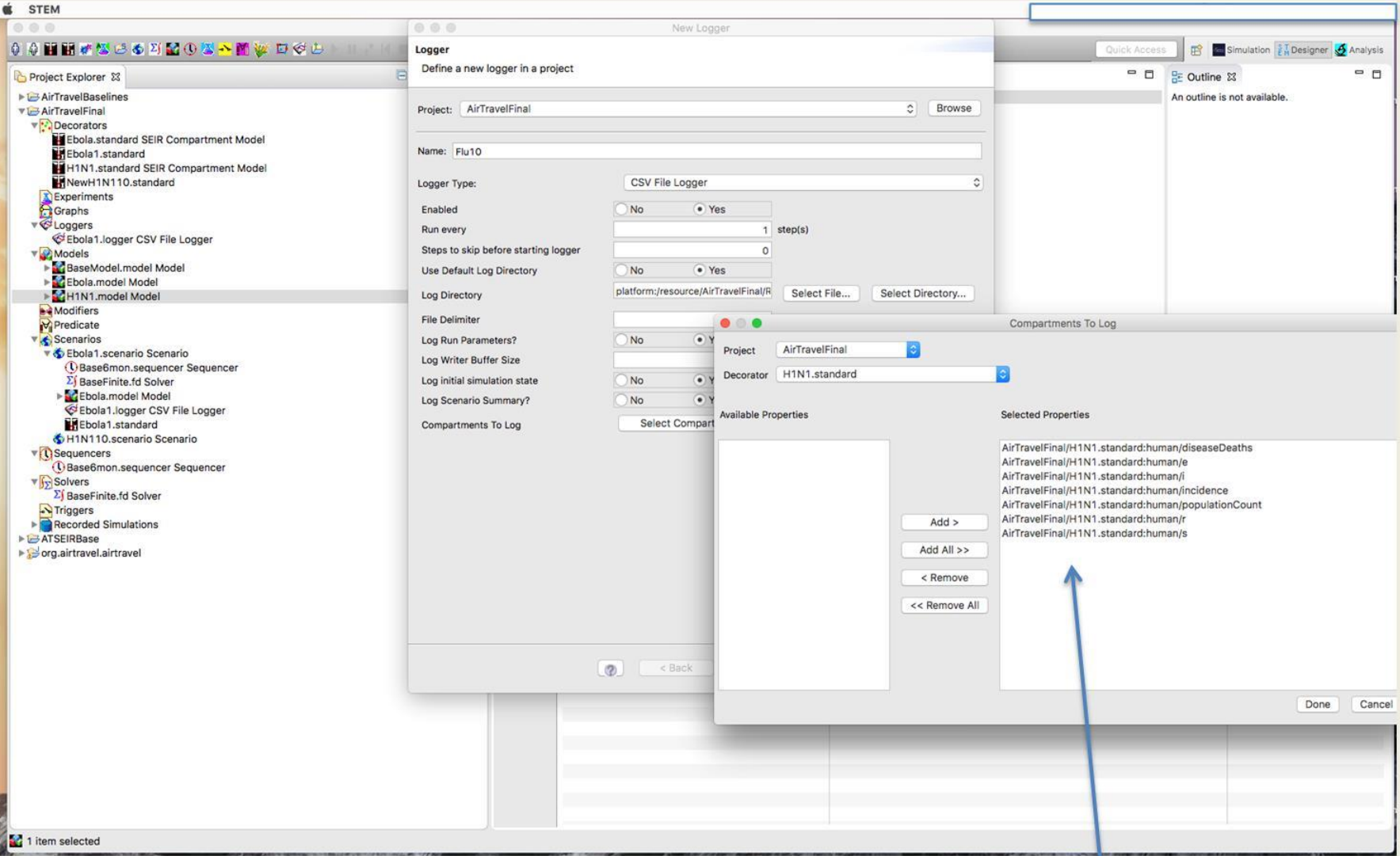
An outline is not available.

1 item selected

Resource	Property	Value

Now you need a new logger, flu10, but make sure you find the directory Same “recorded simulations”, and change the disease from Ebola to flu





Check the disease and the Name of the folder

Now you have all you need for a flu scenario...reuse sequencer, solver, put the right Model, add the 10 flu infector, and the 10 flu logger

The screenshot shows the STEM software interface. The top menu bar includes 'STEM', 'File', 'Tools', 'Edit', 'New', 'Scenario Editor', 'Search', 'Run', 'Window', and 'Help'. The main window is titled 'STEM' and contains several panes:

- Project Explorer:** A tree view on the left showing a project structure. The 'H1N110.scenario Scenario' is selected, and its contents are expanded to show:
 - H1N110.scenario Scenario
 - H1N110.model Model
 - BaseModel.model Model
 - H1N110.standard SEIR Compartment Model
 - Base6mon.sequencer Sequencer
 - NewH1N110.standard
 - BaseFinite.fd Solver
 - Flu10.logger CSV File Logger

- Outline:** A pane on the right that says 'An outline is not available.'
- Properties:** A table at the bottom showing the properties of the selected item. It has columns for 'Resource', 'Property', and 'Value'. The table is currently empty.

The status bar at the bottom left indicates '1 item selected'.



- Gain Factor ▶ 0.000001
- Logarithmic Scaling 0.000001
- 0.00001
- 0.0001
- 0.001
- 0.01
- 0.1
- ✓ 1
- 10
- 100
- 1,000
- 10,000
- 100,000
- 1,000,000

- ✓ Draw Polygon Borders
- Adjust Edge Thickness
- Edge Gain Factor ▶
- Logarithmic Edge Scaling
- Reset View
- Reset Options
- ✓ Show Options

Now Displaying

- H1N110.standard SEIR Compartment Model
- human
- Labels Colors Mapping
- |

Edges

-

Simulation Control Project Explorer Scenarios

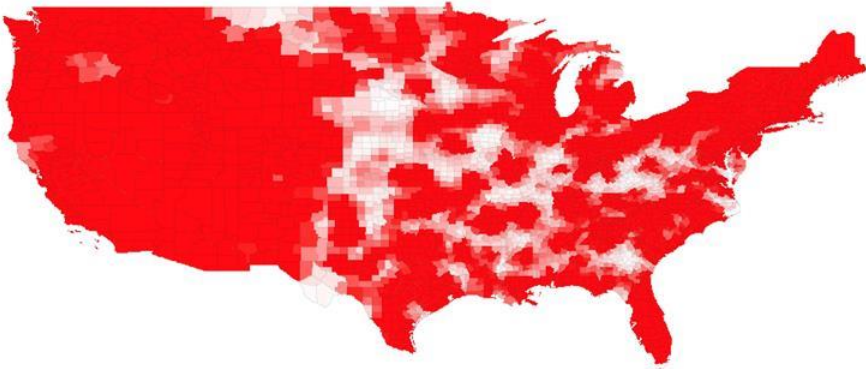
[3] H1N110
Progress : 3%
Status : Paused

[8] Time : Thu Sep 08 12:00:00 EDT 2016

▶ || ◀ ⏪ ⏩ ⏹

Time Series Phase Space

Now Displaying :
remove



Now Displaying

- H1N1_standard SEIR Compartment Model
- human
- Labels Colors Mapping
- |

Edges

-

Simulation Control Project Explorer Scenarios

[3] H1N110
Progress : 99%
Status : Paused
[162] Time : Thu Feb 09 11:00:00 EST 2017

▶ || ◀ ⏸ ⏹

Time Series Phase Space

Now Displaying :
remove

Here you can really see how the “Gain” changes the picture...you can see how The disease spreads

The screenshot displays the STEM software interface. At the top, the menu bar includes 'STEM', 'File', 'Tools', 'Edit', 'New', 'Search', 'Run', 'Window', and 'Help'. The main window title is 'STEM'. Below the menu bar is a toolbar with various icons. The main workspace is titled 'Graph Map' and contains a map of the United States with a red overlay representing disease spread. The map is labeled 'H1N110 | Linear Scale | Gain x10.0'. A context menu is open over the map, showing a 'Gain Factor' slider set to 10. The menu items are: Gain Factor (0.0000001), Logarithmic Scaling (0.000001, 0.00001, 0.0001, 0.001, 0.01, 0.1, 1, 10, 100, 1,000, 10,000, 100,000, 1,000,000), Draw Polygon Borders (checked), Adjust Edge Thickness, Edge Gain Factor (0.01, 0.1, 1, 10, 100, 1,000, 10,000, 100,000, 1,000,000), Logarithmic Edge Scaling, Reset View, Reset Options, and Show Options (checked). Below the map, there are several panels: 'Now Displaying' with dropdowns for 'H1N1.standard SEIR Compartment Model', 'human', and 'Labels Colors Mapping'; 'Edges' with a dropdown; 'Simulation Control' with a progress bar at 100% and status 'Paused'; 'Project Explorer' with a list of items; 'Time Series' and 'Phase Space' plots; and a 'Now Displaying' panel with a dropdown and a 'remove' button.