

## 3.4 SIR Model and R-Naught

Heckman Library 406C

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**Keywords** agent-based modeling, social sciences, computational methods

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### 1. SESSION A (LAB)

Finishing our SIR model and calculating the R-naught.

- Completing the SIR model in NetLogo.
  - Calculating the basic reproduction number ( $R_0$ ).
  - Exploring parameter effects on epidemic dynamics.
  - Running simulations and analyzing outcomes.
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### 2. SESSION B (LAB)

Creating graphics and monitors for the SIR Model.

- Building visualizations for the SIR model dynamics.
- Implementing monitors for key epidemiological metrics (e.g., infection rate, recovery rate).
- Analyzing the impact of different parameters on model behavior.

### Netlogo Code - SIR Model

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### 3. ASSIGNMENT: LAB MEMO #5

**Due:** 10/28 before class | **Points:** 100 points

**Prompt (1-2 pages):**

Contagion model implementation & analysis

1. Use the model we started in class (SIR) as a base.
2. Analyze the model's behavior under different parameters (e.g., transmission rate, recovery rate).
3. Build at least two new plots or monitors to track additional metrics (e.g., peak infection time, total recovered).
4. Write your Lab Memo. You can [download the template in here](#).
5. Make sure you add the codes you've changed, as well as interface modifications.

6. Submit your Lab Memo in PDF format through Moodle.
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