Getting started with swirl

To introduce you to using population matrix models, we are going to use a tool called "swirl," which provides an interactive experience for learning R within RStudio.

An introduction to swirl

Before using swirl for the first time, there are several steps you must take:

1. Install the swirl package. (If you haven't done this already – otherwise skip this step.) You can do this with the following code:

```
install.packages("swirl")
```

You can type this in the console (lower left panel of RStudio) at the > prompt and it will execute the command right away.

- 2. Download this file from Canvas and put it somewhere you can find it on your computer: "Population Matrix Models.swc." Don't try to open it.
- 3. Next you will need to **load** the swirl package with this code:

```
library(swirl)
```

[Note that you will never need to install the swirl package again, but every time you use swirl you do need to load it this way.]

You will get a welcome message when you do this and a prompt to type swirl(), but wait to do this.

4. First use this code to install the course that you downloaded above. In the console (lower left panel), type

```
install course()
```

This will open up a window allowing you to navigate to that file you downloaded, "Population_Matrix_Models.swc." Choose the file and click Open. You should see the message "Course installed successfully!"

- 5. Start swirl with the code swirl(). You will be asked to provide a name. First you will get some tips on how to use swirl. After the "Let's get started!" message, you will see a list of courses. Choose the one we just installed, "Population_Matrix_Models" by typing its corresponding number. There are two lessons in this course, "Setting up matrix" and "Analyzing matrix models." Type 1 to select the first lesson.
- 6. Some helpful hints for using swirl:
 - You should be following the prompts that appear and enter your code or responses in the console panel of RStudio. Do not use the script panel (where you may be accustomed to writing your code) unless instructed; otherwise swirl will not recognize your responses.

- Note that if a "..." appears on the screen this means you do not have to anything (besides read the text that preceded it!). Just click "Enter" to read more.
- If ">" appears, you are being asked for some code or to do something else. Read the instructions carefully (and you may need to consult this handout) to understand what code to enter. If your code is not correct, you might either be given a hint for how to fix it, or you might see an error message. (Unfortunately, error messages prevent the hints from showing up, but you might get a clue to your mistake by reading them.) Just try again if this happens review the preceding text to make sure you understood the instructions.
- If you make a mistake in your code, instead of typing it all over again, you can click the **up arrow** and it will automatically enter the last code you used then you can modify it. (This is an option that always applies when working in the console of RStudio.)
- If you get really stuck, type the code info() for some more options of what to do in swirl.
- As an alternative to being asked to enter code, you might see "Selection:" and are asked to select from a numbered list of options type the number (1, 2, 3, ...) of the option as your answer, swirl will give you feedback on whether your response was correct and will give you hints if you are not providing the right answer. Note that the answers are shuffled into a random order so they might not be in the same order the second time.
- 7. Now go through the lesson! Make sure to read the text carefully and follow the prompts.
- 8. When you finish the lesson, swirl will ask, "Would you like to continue with one of these lessons?" If you do not see the next lesson you need, enter the number for the option "No. Let me start something new." You will be given a new list of options pick the course you need, and you will be given the opportunity to select the next lesson.

Note: If you are interrupted and can't finish the swirl lesson, just type bye() at one of the > prompts. You will exit swirl, but your progress will be saved, and when you come back into swirl (by typing swirl(), preceded by library(swirl) if you closed RStudio completely) you will be given the option to resume the lesson you left in the same spot. (Note: this will happen only if you save your workspace when you exit RStudio.)