# VR Experimenter Guide (IRB02\_202003127)

*Last updated 03/22/2022 by X*

This guide will contain a general script for you to tell the subject as well as a checklist to follow. Things that need to be said word for word will be in **bold** while all other suggested dialogue is just in “quotations”. Checklist items will have a checkbox next to them. Please keep in mind that you should make your interactions with participants as normal as possible, it does not need to seem scripted even though it is. Keep all interactions professional, but it’s totally alright to ask about their day and make them feel comfortable!

## Prior to subject’s arrival

### Initial contact

* ☐ Send following email:
  + "Hello (participant name),
  + I see you have expressed interest in our research study titled ”Spatial Navigation in Virtual Environments".
  + This email will contain some brief questions to confirm your eligibility for the study.
  + The experiment will take between one(1) and two(2) hours.
  + Questions:
    1. Is your height between 4’8” (4 foot 8 inches) and 6’5” (6 foot 5 inches)?
    2. Do you weigh less than 285 lbs (pounds)?
    3. Do you have normal vision or corrected to normal vision?
    4. Are you between the ages of 18 and 35?
  + Please confirm all of the above questions for eligibility in this study.
  + When you have confirmed these, I will send you a schedule to select a day and time that you are available to come into the lab.
  + Thank you for your interest in our study!
  + Best,
  + (Your name)"
* ☐ Send Slottr Schedule for participants to pick from:
  + "Thank you for your responses. Please use the below link to sign up for a time to come into our lab.
  + (Insert link here)
  + Best, (Your name)"

### Scheduling

* ☐ Send prospective participants the screening questionnaire that includes questions about height, weight, age, vision normal or corrected to normal, etc.
* ☐ Schedule participants for a two (2) hour block. The experiment will take approximately an hour to two hours.
  + ☐ When participants are scheduled, send them a confirmation email stating:
    - ☐ "Hello (participant name),
    - You are currently registered for (date) at (time). Please meet at the UF Psychology building (945 Center Drive, Psychology Department Gainesville, FL 32611-2250) 5 minutes before your designated time.
    - Best,
    - (Your name)"
  + ☐ Day before email reminder:
    - ☐ "Hello (Participant name),
    - You are currently registered for tomorrow at (time). Please meet at the X 5 minutes before your designated time.
    - We look forward to seeing you!
    - Best,
    - (your name)"
  + ☐ Day of email reminder:
    - ☐ "Hello (Participant name),
    - You are currently registered for today at (time). Please meet at the X 5 minutes before your designated time.
    - We look forward to seeing you!
    - Best,
    - (your name)"

### What to get prior to subject arrival:

* ☐ 30 minutes prior to arrival, collect all necessary supplies:
  + Script
  + Checklist
  + Pen and clipboard
  + Informed consent form printed and stapled
  + Participant mask
* ☐ 15 minutes prior to arrival, set up all tasks on computer:
  + Qualtrics [Link](https://ufl.qualtrics.com/jfe/form/SV_b961J76Ru3GfkNg) loaded
  + Unity study loaded
  + Virtualsilcton Model-building task loaded [Link](http://www.virtualsilcton.com/study/753798868)
  + Participant log ready to fill out
  + HSP Log opened and subject name filled out

### What to do upon subject arrival:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* ☐ **Greet participant:** Greet the participant outside the Psychology building while wearing a mask over your (the person conducting the study) nose and mouth at all times.
  + “Hello (insert name), welcome to the SCANN Lab. Do you have a mask that you can wear for the next two hours? If you don’t, you can wear this one.” *Offer them fresh mask from lab*
    - *If pushback:*
    - “For the protection of our staff and yourself, we prefer all research subjects to be masked at all times during the study.” *If they still push back at this stage -* “OK, no problem.”
* ☐ **Parking:** Instruct them where to park and ensure that they are good to park their vehicle in the spot that they have chosen.
* ☐ **Take to VR Lab:**Lead participant to VR Lab space, where you will offer some hand sanitizer when they enter the room.
* ☐ **Informed consent:**Offer the participant a seat and ask them to read through the consent form. Answer any questions they may have, and ask them to sign and date on the last page of the form. Offer a copy of the form, but they do not need to take one if they do not want one.
  + “Please take a seat and we can get started. Please look over this consent form and let me know if you have any questions.”
* “During this study, there will be two major sections. The first activity will be to answer some questionnaires. The second task will be done in the VR environment.”

### Behavioral Task:

* *link deleted for double blind review process*
* ☐ **Have participant fill out Qualtrics form:** Participant will fill out Qualtrics form on laptop in the VR Room. Enter their participant ID that matches the participant log. Leave Silcton ID blank.
  + “Please fill out the following questionnaires. If you have any questions, let me know. Also, please check carefully that you are answering each question correctly.”

### VR Treadmill:

*Administer after behavioral round of testing*

* “Please confirm that you are between 4’8” and 6’5" in height, less than 285 lbs. in weight, have normal vision or corrected to normal vision, and are between the ages of 18 and 35."
* “You must wear special shoes while on the VR treadmill. We have sizes 5, 8, 10, 11, and 15 available in men’s size (important to mention because the difference between men’s and women’s sizes is 1.5 (so an 8 in women’s would be a 6.5 in men’s size))”
* **“The shoes are slippery on the carpet and the treadmill (which allows you to walk). Please remain seated whenever you are putting the shoes on or taking them off, and at all times except when moving between the chair and the treadmill. Please tuck in the extra elastic to your shoes so that you do not trip on it.”**
* **“You will be secured in the treadmill with a harness that will go around your waist and through both of your legs, similar to a climbing harness. If you would like assistance putting the harness on, please let me know.”**

While doing a demo on the treadmill

* **“The main idea is that when you turn around, these should all come with you.”**
* **“Walking on the treadmill will be a small learning experience. The mechanism of walking works similar to if you were to try walking in place on some slippery ice. You will be first placed in a learning environment in which you can test out walking prior to the experiment starting. People need to feel the experience for themselves, but the general mechanism is to step up towards the lip of the treadmill, transferring your weight to that foot, thus causing it to slide down the slope of the treadmill. Then repeat this method to walk. You should lean forward while walking and try to use the whole scope of the treadmill. If you take bigger steps, you will walk faster in the virtual environment.”**
* **“You can use the ring of the treadmill for *light* support (emphasize light), but please do not place all of your weight on the ring.”**

After they have been secured in the treadmill

* **“Now that you are secured on the treadmill, you can practice moving without the headset on.”**
* **“Now, please place this headset on your head, with the lenses over your eyes. It will be dark, and you will not be able to see your surroundings in this room. There may be a”holding world" initially, but this will change when I run the training world environment. If at *any* time you want to stop, rest, or have a question, please let me know."**
  + Set retractable cable closer to their head so they do not hit the cord when turning around.
* ☐ **Calibrate:** Run the calibration steps outlined below:
  + ☐ Tell participant you will run a quick calibration
  + ☐ Calibrate on Steam first for the room setup.
    - ☐ Select standing room only
    - ☐ Height of headset should be participant height in inches **plus 2 inches**
  + ☐ Calibrate with the Omni Calibration icon on the Desktop
    - ☐ We DO NOT have a mount
    - ☐ Have participants follow the directions on the screen while holding the controllers. (They should align their head with their body and click calibrate. Then test walking to confirm they are walking straight. Have them click done)
* **“We will now begin the VR experiments. Please keep your head aligned with your body, looking forward, whenever we are about to start a new scene. I will notify you each time we will start a new scene.”**
  + *Just let them know each time you are about to end a run or start a run so they are not caught off-guard when the environment rapidly changes.*
* ☐ **Run Testing Scene:**Run the testing scene in Unity without goals (Scene name: **Silcton\_VR\_Testing**).
  + “**We will now run the testing scene. The only goal in this scene is for you to practice walking on the VR treadmill. When you feel comfortable walking, please let me know and we will move on.**”
  + ☐ When scene has started:
    - “**You should be able to see grass and trees. There is no goal to this task, it is only meant to help you practice walking, when you feel comfortable we can move on.**”
* Open the scene “**SceneSelectMenu**” in Unity, enter the participant number and select the experiment condition.
* ☐ **Follow below script for rest of VR portion of study:**
* **(If needed, “Please do not move as I read the instruc tions.”)**
* **“We will now begin the virtual environment part of the study. You will be exploring Virtual Silcton by walking along paths in a virtual world and learning the NAMES and LOCATIONS of each building as they relate to each other. You will take four walks in total. The goal is to use this information in two activities at the end of this exercise. One activity will be a pointing task where you point to other buildings from locations in this environment, and the other task will be placing buildings on a map with the computer you used earlier.”**
* ***IF PARTICIPANT HAS COMPASS CONDITION:***
  + See the **participant log** for condition: ***IF NOT COMPASS CONDITION, SKIP***
  + **“You will be holding a compass during your VR tasks. The compass can be held in whichever hand you prefer. The compass points the same way in all scenes and tasks. You only need the controller with the compass. Could you please hand me the one without the compass?”**
* **IF PARTICIPANT HAS THE MOUNTAIN CONDITION:**
  + **“You only need one controller for this part of the experiment. So, could you please hand me one of them?”**
* **“The screen you see now is the first of four routes you will learn. Along each of the FIRST TWO routes you will learn four buildings; eight buildings total. Each building is indicated by an orange gem hovering about the path. [POINT OUT GEM]. Next to the gem you will see a sign that tells you the name of the building [POINT TO YELLOW/RED SIGN]. Routes 1 and 2 each have 4 buildings that you must learn the names and locations of. Routes 3 and 4 provide an opportunity to explore the environment from different perspectives, and connect the first two routes to each other, but do not contain any new buildings to learn.”**
* **“Please note that these trials are untimed so that you can adequately familiarize yourself with your surroundings.”**
* **“When you are ready, follow the arrows on the road. Take as much time as you like. You must stay along the path indicated by the arrows, but you may walk in either direction. If you veer from the path indicated, you will run into invisible boundaries that will stop you automatically. You must proceed from the beginning of each route to the end, which will be marked by “Finish" printed on the road. These instructions apply to all routes."**
* **“Remember, this first route contains 4 buildings. You must learn the names and locations of them to succeed on the following tasks. Finally, be sure to pay attention to the front door of each building, as that is the specific spot on the building you will be asked to point to. Do you have any questions?”** (They may move now.)
  + **“Did you make note of all four buildings?”**

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* **“This is the second route in a separate part of the same virtual environment. Again, you’ll learn the names and locations of 4 new buildings. Again, proceed from the beginning to the end.”**
  + **“Did you make note of all four buildings?”**

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* **“Now that you’ve learned the names and locations of all eight buildings, you will have an opportunity to learn how the first two routes are connected. On the next two routes, you will see some familiar things, but you will not have to learn any new buildings. Instead, try to learn as much about the relationship between all eight buildings as you can. It will be important for the tasks that follow. Please also walk from the beginning to the end.”**

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* **“This is a second connecting route that once again provides an opportunity to learn more about how the first two routes are connected. Once again, there are no new buildings to learn, and again proceed from the beginning to the end. At the end of this route, we will pause before continuing to the next task in order to discuss instructions for that task.”**

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* Make note of the time when the walking portion was completed.
  + **Make sure that you do not progress to the pointing task until you explain about the controller.**
* **“You have now completed all walking portions of this experiment. The next portion of this experiment will require you to press buttons on your controller. The button that you will press is called the trigger button, and it is the button located on the bottom of your controller. You may press it now to recognize where it is and how it feels to press it. When you are in the next task, whenever that button is pressed and released, it will record a click and move on to the next question, so make sure that you only click and release when you are ready to do so. Do you have any questions?”**

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Pointing Task:

**BEFORE ENTERING THE POINTING TASK, show them which button is the trigger button (it is the button on the underside of the controller), and let them press it. It is VERY IMPORTANT that they do not test it out while in the environment, because it will advance them along the pointing task.**

* **“DO NOT PRESS ANY BUTTONS UNTIL I HAVE READ ALL INSTRUCTIONS. (**CHANGE THE CONTROLLER**???) This is called the pointing task. In a moment, you will see that you are located next to one of the eight buildings that you have learned (under the diamond). In the top-center of the screen you will see a building name. Notice that you can look around, but cannot walk, to identify the building that you are next to. Also notice that one of your controllers has a laser pointer extending from it. Your task is to point the laser pointer in the direction of the front door of the named building and click the trigger once to indicate your answer. You may hold the laser pointer in whichever hand you want. It is important to click the button completely, and release, only once. If the prompt at the top of the screen does not change immediately, wait a couple of seconds. Once you have pointed to all of the other buildings while standing next to this building, you will automatically be dropped at the next building and you’ll have to point to all of the buildings from there. Do you have any questions?”**

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* “We are now done with the VR portion of the experiment. Please take off your headset and hand it to me. Please stay in the treadmill until I walk around to that side. You may begin taking off the harness, but keep the cage bar closed until I open it.”
* “You can step out now. Please let me know if you need assistance, and remember that the carpet will be slippery with the shoes. Please take a seat while you take the shoes off.”

### Model Building Task:

Link for model-building task: http://www.virtualsilcton.com/study/753798912 or click [here](http://www.virtualsilcton.com/study/753798912)

**“For this task, you will construct a map of the environment you have learned. The box on screen represents a bird’s-eye view of the virtual environment. Below this, you see birds-eye images of the 8 buildings you learned. Scrolling over each of these will display a picture of the front view of the building. The box above the buildings represents the entire virtual environment you have been exploring. Your task is to drag and drop each of these buildings to the part of the box where you believe it to be located in the virtual world. Use the entire space. In other words, buildings at the edge of the virtual world will be near the edge of the box. However, ensure that NONE of the buildings are outside of the box. The positions of these buildings will NOT be recorded. Please let me know when you are done BEFORE pressing the “I am done.” button”** - Record the number on the laptop screen when they are done and put this in the VR Participant Log as Silcton ID.

Use the **WINDOWS + SHIFT + S** keys to screenshot the map the participant built and ask the participant to draw the mountain range.

### Post-Experiment Survey:

Link for the post-experiment survey: link deleted for double blind review process

Post Experiment:

* “Do you have any questions about the experiment?”
* ☐ **Goodbye:**
  + “Thank you so much for coming in today! If you qualify for any follow-up experiments, or for other experiments in the future with our lab, are we able to contact you at the contact information you provided earlier?”
    - Tell them about any other studies we are running in the lab.
    - Walk participant out of building.
* ☐ **Backup Data:**
  + Backup data from local folder on VR computer to respective Google Drive folder after the participant has left.
  + Ensure data was collected correctly (i.e. make sure correct participant ID was recorded and that you add the participant ID in the training environment log)
* ☐ **Cleanup:**
  + Clean all equipment that was used.
    - Spray shoes with Lysol
    - Spray VR treadmill belt with Lysol
    - Wipe down controllers, VR shoe pods, VR treadmill cage, buckles, headset, laptop, chairs, doorknobs, and anything else the participant may have touched with disinfectant wipes.
    - Wiki has more information if desired.
  + Reset retractable cord for headset.
  + Shut down browsers and Unity software.