

IRL Citizen Science Opportunity

Help us understand the microplastics in our air!

*Collect data in
your own
backyard!*

Scan for
more info



*Help save the
Indian River
Lagoon!*

The University of Central Florida is seeking volunteers from New Smyrna Beach and neighboring communities to aid in microplastics research in proximity to the Indian River Lagoon. For more information, scan the QR code or email Dr. Linda Walters at linda.walters@ucf.edu



IRL CITIZEN SCIENCE RESEARCH: FREQUENTLY ASKED QUESTIONS

What is this project studying?	We are investigating microplastic pollution in rain and wind samples around the Indian River Lagoon (IRL).
Why are we looking into this?	Multiple studies have reported microplastics in air, wind, and snow. Additionally, the IRL is considered a microplastics hotspot, with a mean density of 1.5 MP/L lagoon-wide (Walters et al. in the journal <i>Environments</i> 2022).
Why are we worried about microplastics?	Microplastics (plastics < 5 mm) have many potential negative impacts on animals, including reduced survival, growth and reproduction.
Who can help?	Anyone living near Mosquito Lagoon, with a focus on the New Smyrna Beach area.
What does data collection involve?	All participants will receive a set of 12 jars and a small platform. Participants will set 3 jars on the platform outside for 3 hours at a time. Once the time is complete, participants need to make sure each label is filled-out correctly. Once all 12 jars are used, return to UCF scientists.
Do I need any special equipment?	Nope! All equipment will be provided. HOWEVER , participants must wear clothing made of natural fibers while deploying and collecting the jars. Jars must be placed with unobstructed access to the sky and away from dryer vents.
What are examples of natural clothing fibers?	Cotton is most common, as well as linen, hemp, wool, and silk.
How do I get this equipment?	Fill out the interest form at the link below and you will be contacted to schedule material distribution. We can either drop-off the materials at your home <u>or</u> you can pick them up at the Marine Discovery Center in NSB!
What will happen with this data?	All jars will be returned to UCF for student-scientists to process for interpretation! Results will be shared at upcoming public presentations and publications.

Interest Form: <https://forms.gle/iiAMvvEJz1e7zBN5A>

Questions: Dr. Linda Walters (UCF Biology): linda.walters@ucf.edu

How to Collect Atmospheric Deposition Samples for UCF/MDC/FOC Citizen Science Microplastics Project

Below are step-by-step instructions for sample collection once you have received your supplies from either UCF volunteers or Marine Discovery Center (MDC). Please follow these steps exactly. If you have any questions, please email the project lead at the University of Central Florida in the Biology Department, Dr. Linda Walters, at linda.walters@ucf.edu.

Instructions:

- 1) You should receive: one wooden board, 2 paving bricks, a flat of 12 pre-labeled glass Mason jars, and 1 black Sharpie. Note that the jars have been sterilized and purposely contain a small amount of sterile water in the bottom of each jar to trap atmospheric samples.
- 2) Plan to invest “12 hours” in this project. That is because once you deploy jars, you will need to collect them 3 hours later. Upon receiving 12 jars, you will deploy jars at 4 unique times (3 jars/time period). More details below.
- 3) Step 1: Set up the sampling platform as shown in photograph. We want the jars to be located above the grass or rocks or other ground items. The sampling platform must be placed in a location where there is unobstructed access to the sky (no overhanging branches) and as far away from other ground-based obstructions in all directions around the platform as possible (buildings, tree trunks, bushes, etc.). Please also make sure you are not near a laundry dryer vent.
- 4) Step 2: When you have a 3-hour window, label the jars at the start with your name, address (street, city, zip code), date, and start time (include hour and minutes plus AM/PM). Please use the provided Sharpie marker in case it rains.
- 5) Step 3: Place the jars in a row on the sampling platform and remove lids. Keep the lids on platform/bricks so that they have the gold/silver side facing up. Please make sure you are wearing natural fibers when you open the jars so that we do not collect plastic fibers from you. Cotton, linen, wool and silk are good fabric choices.
- 6) Step 4: At the end of the 3-hour window, tightly close the lids on the jars and complete the labeling with your Sharpie (end time; circle wind if there was no rain during this window, both if there was non-rain and rain time, and rain if it was raining during the entire deployment window).
- 7) You are then ready to repeat this process immediately or at another time that works for you.
- 8) When you have used up all 12 jars (four X 3-hr sessions), please contact us to collect the jars or bring them to MDC. If you would like more jars, we can provide more at that time. If you have finished with project, please return the platform as well.

Additional information:

- We can accept samples that are deployed for 3 – 5 hours but no longer. Please be accurate in your reported timing as that is very important for our data analysis.
- If jars get knocked over or forgotten, that is OK. Please make a large “X” over the label so we know not to include them in our data. Please do not rinse our jars with tap water and start again. To ensure there are no microplastics at the start, we triple-rinse all jars with 0.45 micron filtered deionized water. There is a surprising amount of plastic in tap water (and bottled water).

- How long can I keep a set of 12 jars? The maximum time allotted for a one set of 12 jars is 2 months. If you haven't had time within 2 months, then this citizen-science project is not a good fit for your life at present. Please call us to collect materials or return them to MDC.
- Our current plan is to run this project for 12 months, ending in May 2025.
- It may take us a couple of weeks to deliver and collect materials. Please do not be alarmed by this. All of the scientists, mostly UCF undergraduate students, are also volunteers with classes and jobs.
- If we are successful, we will be presenting our results at upcoming conferences and publishing our findings in scientific journals.
- This project is a partnership between the University of Central Florida, Marine Discovery Center, and Friends of Canaveral National Seashore. We thank the Indian River Lagoon National Estuary Program and the University of Central Florida for funding.

THANK YOU FOR YOUR PARTICIPATION!

