# METHODS

To explore the effects of patch size on meta-ecosystem function, we ran a microcosm experiment using protist communities. We were interested in answering two questions. One was at meta-ecosystem level and the other at a patch level. At a patch level, we wanted to answer the question: does receiving resources from a larger ecosystem increases function better than receiving resources from a smaller ecosystem? In other words, is receiving resources from a large ecosystem better than receiving them from a small ecosystem? At a meta-ecosystem scale, we wanted to answer the question: do meta-ecosystems with two medium-sized patches produce more or less than meta-ecosystems with one small and one large patch?

In our protist experiment, we created different cultures that started all with the same community but with different patch size. We simulated a resource flow between the patches by taking a fixed volume from the first patch, microwaving it until all protists were dead, and pouring it into the second patch. And then doing the same with the second patch. Isolated patches were used to control for spatial flow. In that case, the microwaved volume was poured back into the same culture. Our experiment lasted 4 weeks. We sampled it every 4 days and made the resource flow happen every day after the sampling. We did the first resource flow on day 5.