

## UCR Laboratory Waste Recycling Program

### Introduction:

It is common to focus on plastic bottles and cans when we talk about recycling, but laboratories can occupy more than 40% of the campus floor space and generate a large amount of different recyclable materials. By its very nature, research labs use a lot of consumables, especially in the fields of biology, medicine, and chemistry, and most of them are high-quality recyclable materials. Some might be contaminated by hazardous waste, such as radioactive material or live cells, but this only represents a small portion; and they are already segregated from the municipal solid waste for disposal.

Given the UC's strong commitment to sustainability and our zero waste goal for 2020, the Office of Sustainability chose to look closer at the waste produced by laboratories, such as various plastics (#1 to #7), paper and cardboard, metal and aluminum, Styrofoam coolers, and nitrile gloves.

### Approach

The lab recycling projects started in August 2014 with 10 pilot labs and 1 pilot building (Genomics Building, more than 25 open-labs), and lasted for 2 years. During this period, we collected a large sample of items that could be recycled, and we presented them to the hauler in order to ensure that they will be accepted and then recycled. We met with every PI and lab manager of the Genomics Research Building, presented the program, and answered their questions. The implementation has been a great success and our weekly presence helps to limit the contamination with non-recyclable items and to ensure the effectiveness of the program.

We also developed a recycling program for Styrofoam coolers, which are used in massive quantities on campus. 18 Bins for Styrofoam collection have been stationed in eight lab buildings.

### Project Purchases

This program called for bins only. We used around 80 small blue bins and around 20 large ones, which brought the total cost to \$3,300.

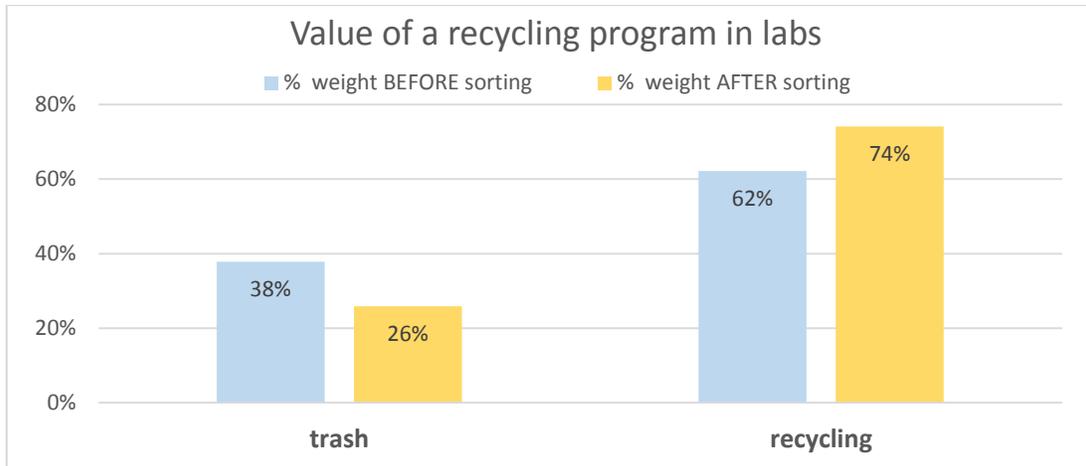
### Results

During the 2 years of piloting the program, we collected **2,850 Styrofoam coolers**, averaging 150/month, they filled four 3-yard dumpsters every month.

We also conducted a 2-day waste audit in August 2016 resulting in:

- **62% of lab waste** recycled with the pilot program in place.
- With a more efficient lab recycling program, this number could go up to **74%**.
- Recycling contamination is very low: 2.4% - lower than the 10% threshold accepted by Material Recovery Facilities.
- The contamination in the trash is very high, more than 50% of material in the trash could have been recycled.





### Extrapolation to all lab buildings on campus

If we estimate that the campus has 20 lab buildings, and based on the recycling rates achieved with the Genomics building, the program could divert 379 tons/year and **increase UCR diversion rate by 10.3%**.