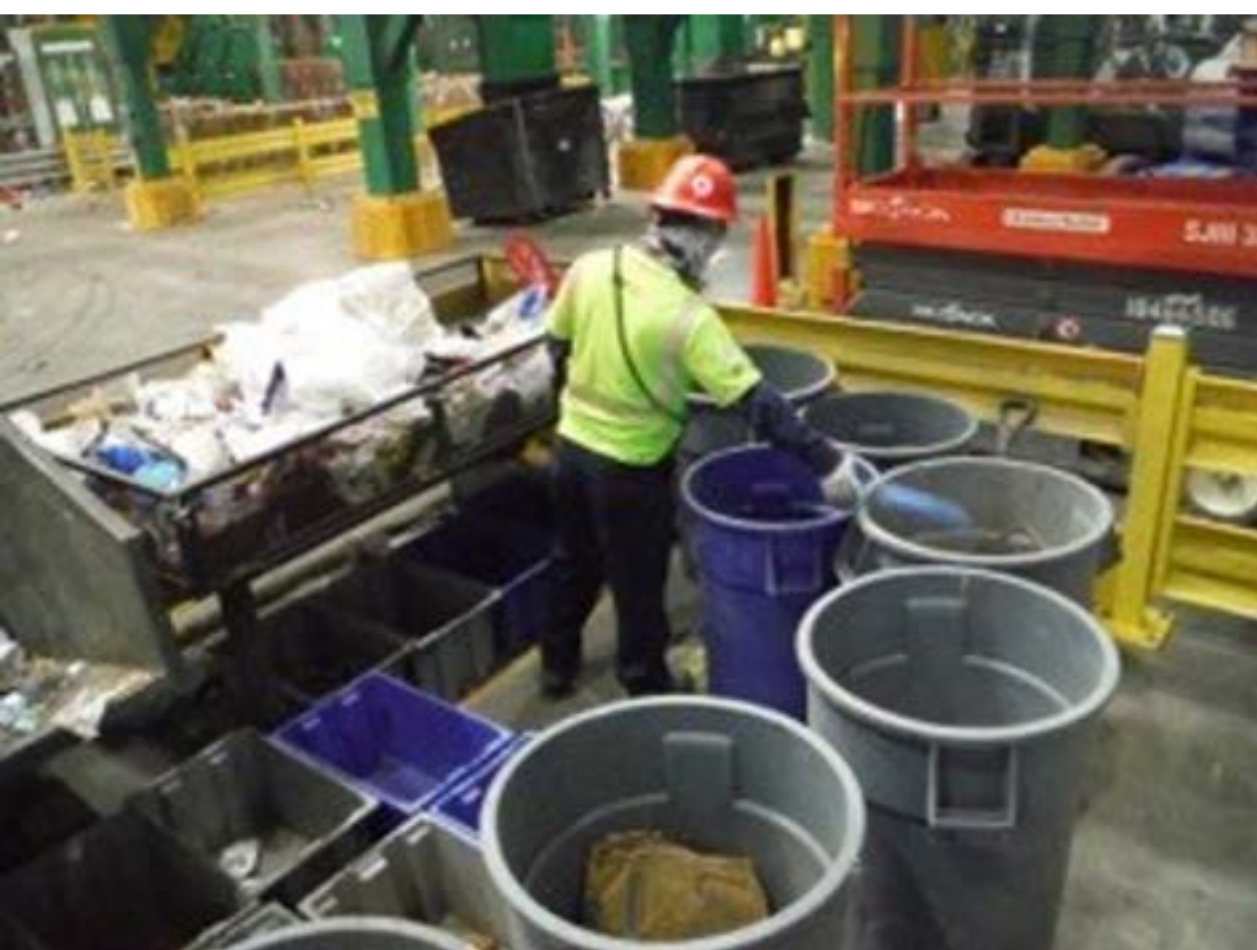


RecyCOOL: Reduce Methane Landfill Emissions Through Citizen Science & Community Outreach



Synopsis

- Co-create awareness, education, and motivation within communities to increase participation in proper waste management.
- Implement citizen and community science projects in local communities.
- Increase recycling and decrease landfill use.
- Reduce food waste and hunger in communities.
- Decrease methane emissions from landfills.

Research Results and Products

- Co-create new paradigms with communities for organic waste reduction and increased recycling rates.
- Explore anaerobic technologies, biofuels, biochar, and black soldier fly larvae (BSFL) processing in circular plastics micro factories.
- Co-create successful educational models for communities citywide.
- Develop tracking and measurement models to assess improvements over time.

Commercialization and/or Societal Impact Opportunities

- **Application:** Create models for communities and businesses to reduce fines due to waste contamination, thereby streamlining budgets.
- **Key Values:** Reduce community hunger by creating opportunities and infrastructure for businesses to redirect food waste from landfills to those in need.
- **Potential Customers:** State of California so it can meet greenhouse gas reduction goals and implement SB 1383.

Research Objective

- Investigate barriers to recycling and food waste separation protocols in communities.
- Co-create partnerships with communities to facilitate shifts in attitudes and behaviors toward waste.
- Increase recycling participation and food separation rates in communities while decreasing contamination in waste bins.
- Reduce organic and inappropriate waste sent to landfills.

Team Names & Collaborators

ARCS Students: Miller Alas, BS Mech Engr; Garret Eiferman, BA Psych; Crystal Valdez, BA Psych; Julius Maxwell, BS Food Sci; Andrew Garcia-Leopold, BA Comp Sci; Arpitha Pradeep, MS Engr Mgmt, MSE; David Gukasyan, BS Business Analytics; Stanislav Kahzar, BS Comp & Data Sci; Monish Ramesh, MS Industrial Engr; Lucia Miguel, BA Sociology; Jen-yu Li, MA Sustainability; Pam Porcaro, MA Sustainability; Anthony Derderian, BA Poli Sci; Sky Lane, BS Environmental Sci, Shreyas William, MS Engr Mgmt

Faculty: Dr. Eugene Tseng, Autonomy for Sustainability Lead; Dr. Nhut Ho, Mech Engr; Dr. Bingbing Li, Manufacturing Systems Engr & Mgmt

Collaborators: Los Angeles Local Enforcement Agency, Waste Management, Anaergia

Research Approach

Conduct initial site visits to locations for research, enroll community leaders, and train students in environmental justice.

- Collaborate with community members and leaders.
- Conduct environmental justice analysis.
- Hold community project briefings.
- Develop surveys and engagement materials.
- Implement the Park Parthenia Apartments pilot project.

Citations: N/A

