

SUSTAINABILITY NEWS

Chemistry Department | University of Michigan



TOP NEWS OF THE MONTH

SUSTAINABILITY DAY

>>> READ MORE | 2

Join us for our inaugural sustainability day on June 5th. Sign up by **May 31** for lab certifications.

SUSTAINABILITY BOOK CLUB

>>> READ MORE | 3

Participate in a book club featuring Hannah Ritchie's 'Not the End of the World' on **June 10** Snacks provided for those that RSVP!

OFFICE SUPPLY REUSE

>>> READ MORE | 3

Waste management is collecting gently/unused office supplies. Sign up **June 14**

READ MORE | 4 <<<

Thrift shop for lab supplies - *free airplant* for first 25 participants on **June 6** and Thursdays thereafter.

'Truly essential'
MARGARET
ATWOOD
TED33

'I find it hard to
express how much
I love this book'
RUTGER
BREGMAN



Not the End of the World

How We Can Be the First Generation to Build a Sustainable Planet

HANNAH
RITCHIE



LAB SHOP SWAP

SUSTAINABILITY DAY

>>> JUNE 5TH, 2024 CHEMISTRY ATRIUM

What is sustainability day?

Staff from the Office of Campus Sustainability (OCS) will be in our building performing lab walk-throughs to award sustainability certifications and provide PlanetBlue training to interested labs. In addition, they will host two panels and have an informational table in the Atrium. They will also have pizza, drinks, and snacks!

How to participate in sustainability day?

To receive a sustainability certification from OCS, your lab will need to fill out this [self-assessment form](#) by **May 31st**. You will be asked about commonly used chemicals and procedures in your lab. After completing the form, OCS will follow up with you via email regarding ways that the lab can operate more sustainably and set up a time for a walk-through on June 5th.

Why participate?

If you are interested in making your workspace more sustainable, but are unsure what actions to take in your workplace for the biggest impact -- this is a great place to start! The self-guided form and interaction with OCS will allow you to identify opportunities, benchmark against other workplaces/labs, and connect to resources.

How long will this take?

Overall, the entire process should not take more than 2 h, including filling out the form, the walk through, and PlanetBlue training.

If you have questions about this process and how to participate, please email Lauren (rilauren@umich.edu) or Alex (agalens@umich.edu) from OCS!

Schedule of events:

| | |
|-------------------|---|
| 11:00-1:00 | Tabling (Snacks provided!) <i>Chemistry Atrium</i> |
| 1:00-2:00 | Freezer challenge panel <i>CHEM 1300</i> |
| 2:00-3:00 | Planet Blue Ambassador Training <i>CHEM 1300</i> |

DID YOU KNOW?

10-13% of our trash comes from plastic bin liners?

A waste audit showed **10-13%** of our trash is plastic liners from the waste bins. To reduce this waste, the chemistry sustainability committee has removed unnecessary trash bins from the conference rooms in the building. You can do this too, in your lab or office space!

SUSTAINABILITY BOOK CLUB

>>> JUNE 10TH, 3:00-4:00, LSA BLDG, ROOM 2001

Join us for an inspiring conversation around hope, climate solutions, and data-driven optimism.

This event, hosted by LSA Sustainability Staff, invites all students, faculty, and staff members to explore themes, narratives, thought-provoking insights, and implications for future planning efforts in LSA at our upcoming book club session. The discussion will be centered around "Not the End of the World" by Hannah Ritchie.

Afternoon snacks will be provided to attendees who RSVP.

OFFICE SUPPLY REUSE DAYS

'Truly essential'
MARGARET ATWOOD TED23

'I find it hard to express how much I love this book'
RUTGER BREGMAN



Not the End of the World

How We Can Be the First Generation to Build a Sustainable Planet

HANNAH RITCHIE

Office Supply Reuse Days 2024

Do you have pens, file folders, staplers, or other gently-used office supplies you don't need?

Or maybe you're someone who needs more office supplies?

This event is for you!

Your effort supports U-M's waste reduction goal: Reduce landfill waste by 40% by 2025.



Set out gently used & unwanted office supplies outside labs on **June 18th-19th** if you want to participate. Contact Ally Tonsberg (atonsber@umich.edu) if you have any questions.

LAB SWAP SHOP

➤➤➤ JUNE 6TH, 1-3PM NORTH UNIVERSITY BUILDING RM 5004



This program is akin to a 'thrift shop' for free lab supplies to University of Michigan - Ann Arbor researchers on a first-come, first-serve basis. Surplus inventory was generously donated by U-M labs on campus. Most supplies are in gently used/new condition.

Join us on June 6 from 1-3 pm for the grand opening and receive a **free airplant** if you are one of the first 25 people to attend. Open every Thursday from 1-3 pm after that.

GREEN CHEMISTRY LITERATURE

ACS Sustainable
Chemistry & Engineering

Strategies for Considering Environmental Justice in the Early-Stage Development of Circular Economy Technologies

Taylor Uekert,* Julien Walzberg, Hope M. Wikoff, Meredith M. Doyle, and Alberta C. Carpenter*

Cite This: <https://doi.org/10.1021/acscuschemeng.4c02205>

Read Online

ACCESS | Metrics & More | Article Recommendations | Supporting Information

ABSTRACT: The circular economy could transform how industry and society approach resources and waste, resulting in significant environmental justice (EJ) implications. However, there are few resources for analyzing the EJ impacts of new circular economy technologies before they are deployed. This work presents an EJ framework tailored for early stage circular economy technologies and showcases its capabilities through a case study on enzymatic plastic recycling. By providing concise, actionable, and accessible guidelines based on technology readiness levels and a series of 20 questions, the framework empowers both experts and nonspecialists to evaluate the justice implications of circular economy solutions. Preliminary user feedback highlights the approachability of the framework and its corresponding interactive worksheet, as well as their potential to stimulate innovative thinking toward a more just and sustainable future.

KEYWORDS: environmental justice, circular economy, sustainability

INTRODUCTION

Environmental justice (EJ) guarantees people's agency over decisions that impact their fundamental human right to a clean, healthy, and sustainable life.¹ EJ, as defined by the United States (U.S.) Environmental Protection Agency (EPA), encompasses the fair treatment and meaningful involvement of all people in the development, implementation, and enforcement of environmental laws, regulations, and policies.² The circular economy, in which resources are kept in circulation rather than permitted to become waste, could have significant EJ implications.³ Globally, the waste sector offers low wages and poor working conditions, involves an estimated 15 million informal waste pickers, and releases air, water, and solid emissions to predominantly disadvantaged communities.⁴ As circular economy technologies aim to displace the traditional waste sector, a consideration of EJ can help ensure that new innovations redress rather than perpetuate existing harms. When EJ is ignored, technologies could jeopardize the wellbeing and sustainability of communities, cause damage that must be mitigated or repaired, face social acceptance barriers, and miss opportunities that only become apparent through the inclusion of diverse perspectives.⁵

Evaluating EJ for emerging circular economy technologies can prove challenging. While several frameworks, such as EJScreen and social life cycle assessment (S-LCA),^{6,7} have been developed, they require granular information that is unlikely to be available at the earliest stages of technology development and calculate dozens to hundreds of indicators that may be difficult for nonspecialists to interpret. The recently

developed Justice Underpinning Science and Technology Research (JUST-R) framework strives to overcome similar challenges with regards to energy justice and early technology readiness level (TRL) renewable energy technologies.⁸ Users of JUST-R stated that the 40 recommended energy justice metrics helped to broaden their perspectives on their research, but also cited barriers to using the framework such as time requirements, insufficient resources to evaluate certain metrics, redundant or irrelevant metrics, and a lack of connection between the metrics and the broader energy justice concerns they were aiming to address.⁹

To guide circular economy development from the earliest stages of research and enable better mitigation of and planning for potential justice issues, EJ frameworks should be concise, actionable, and accessible to experts and nonspecialists alike. Here, we present an inquiry-based framework for evaluating the EJ implications of circular economy technologies. The framework considers environmental, worker, supply chain, economic, and community impacts that can be evaluated qualitatively or quantitatively, depending on the TRL of the analyzed technology. For early stage technologies, we provide a simple worksheet comprising questions around key environmental, worker, and supply chain considerations. Through a

Received: March 14, 2024

Revised: May 15, 2024

Accepted: May 16, 2024

ACS Publications

© XXXX The Authors. Published by
American Chemical Society

<https://doi.org/10.1021/acscuschemeng.4c02205>
ACS Sustainable Chem. Eng. XXXX, XXX, XXX-XXX

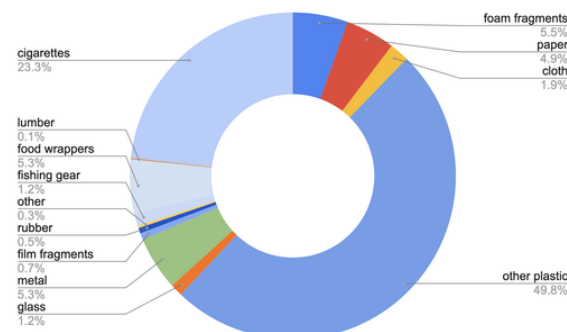
The phrase 'circular economy' has become a buzzword, and chemistry is no exception. This paper presents an actionable framework in the form of 20 questions, which empower chemists to evaluate the environmental justice implications of circular solutions. Special thanks to graduate student Vai Shastri (McNeil Group) for sharing this paper.

<https://doi.org/10.1021/acscuschemeng.4c02205>

ANNOUNCEMENTS

➤➤➤ SUCCESSFUL HURON RIVER CLEAN-UP

This marks another successful year of the Huron River cleanup. Together, we made a positive impact on the local ecosystem by picking up >8000 pieces of trash/recycling. See below for the breakdown of trash, and a gentle reminder to reduce waste whenever possible!



➤➤➤ TRAINING AND CERTIFICATION

If you would like to get certified or become a lab ambassador, there are several ways to get involved. These look great on a CV or resume!

[Planet Blue Ambassador](#)
[OCS Sustainable Lab Certification](#)
[My Green Labs Ambassador Training](#)

➤➤➤ ADDITIONAL NEWSLETTER SIGNUP!

Email sustainable-labs@umich.edu to sign up for sustainability-related ideas for research labs on campus.