



**5 GYRES**  
SCIENCE TO SOLUTIONS

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# OUR MISSION

empower action against the global health crisis of plastic pollution through **science, education, and advocacy**





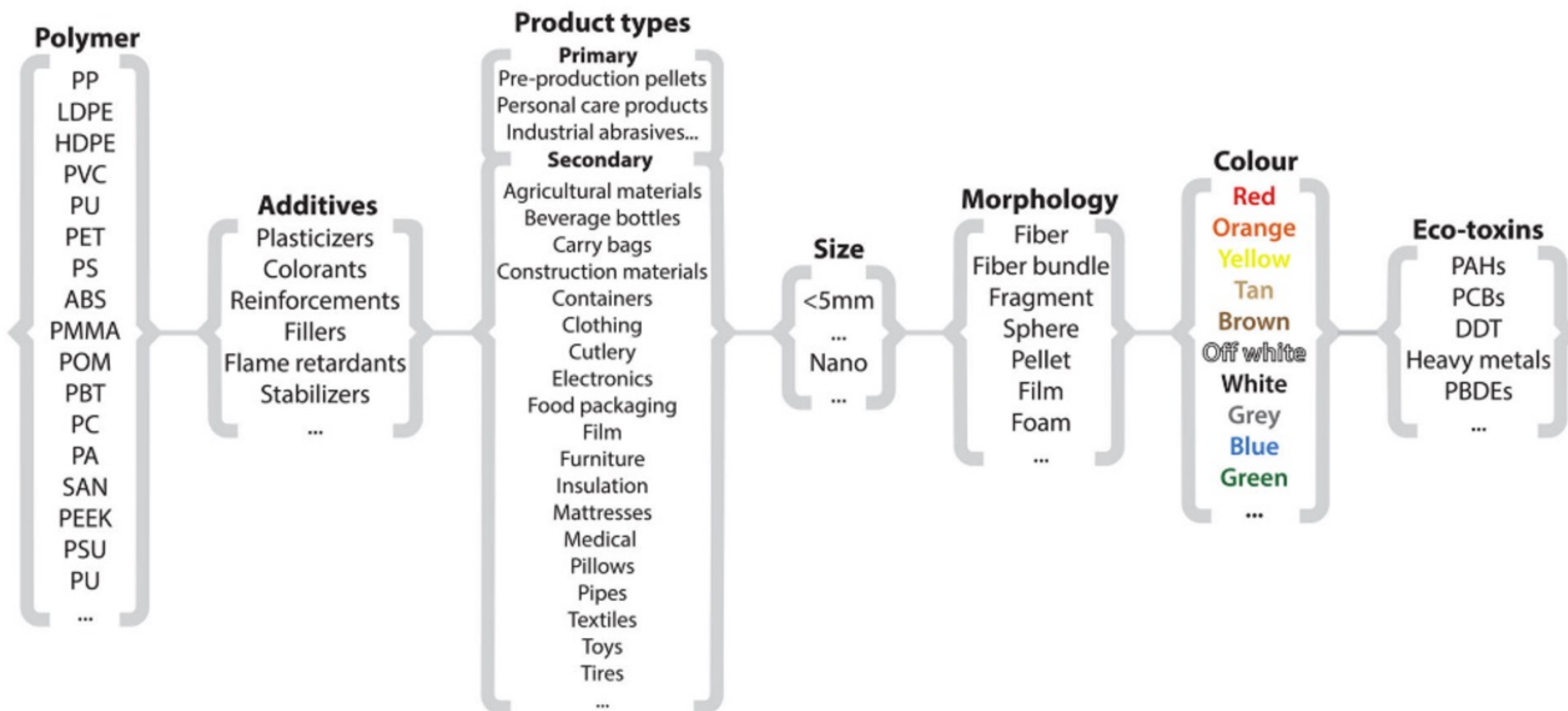
Focus articles are part of a regular series intended to sharpen understanding of current and emerging topics of interest to the scientific community.

## Rethinking Microplastics as a Diverse Contaminant Suite

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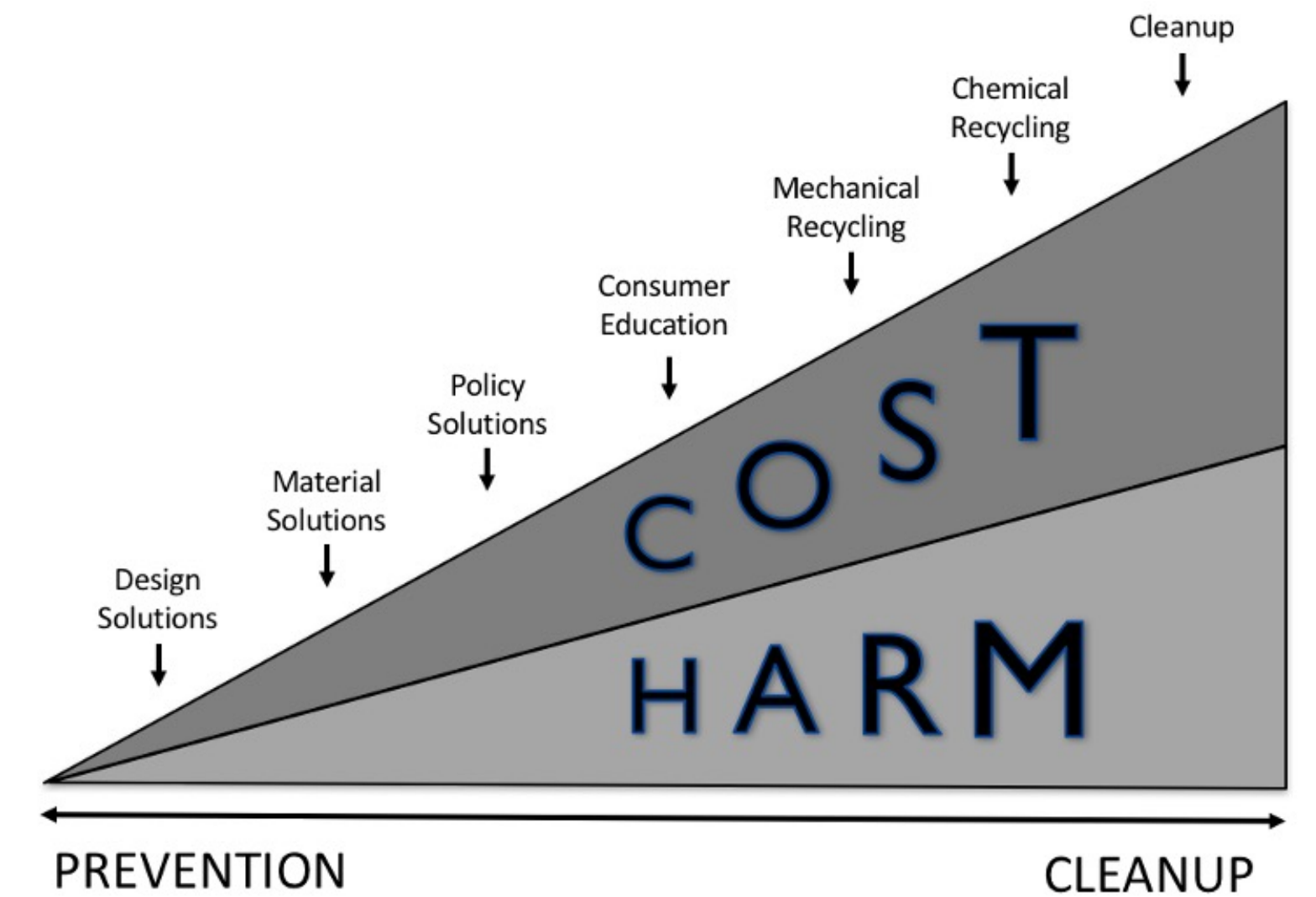


*Environmental Toxicology and Chemistry*—Volume 38, Number 4—pp. 703–711, 2019



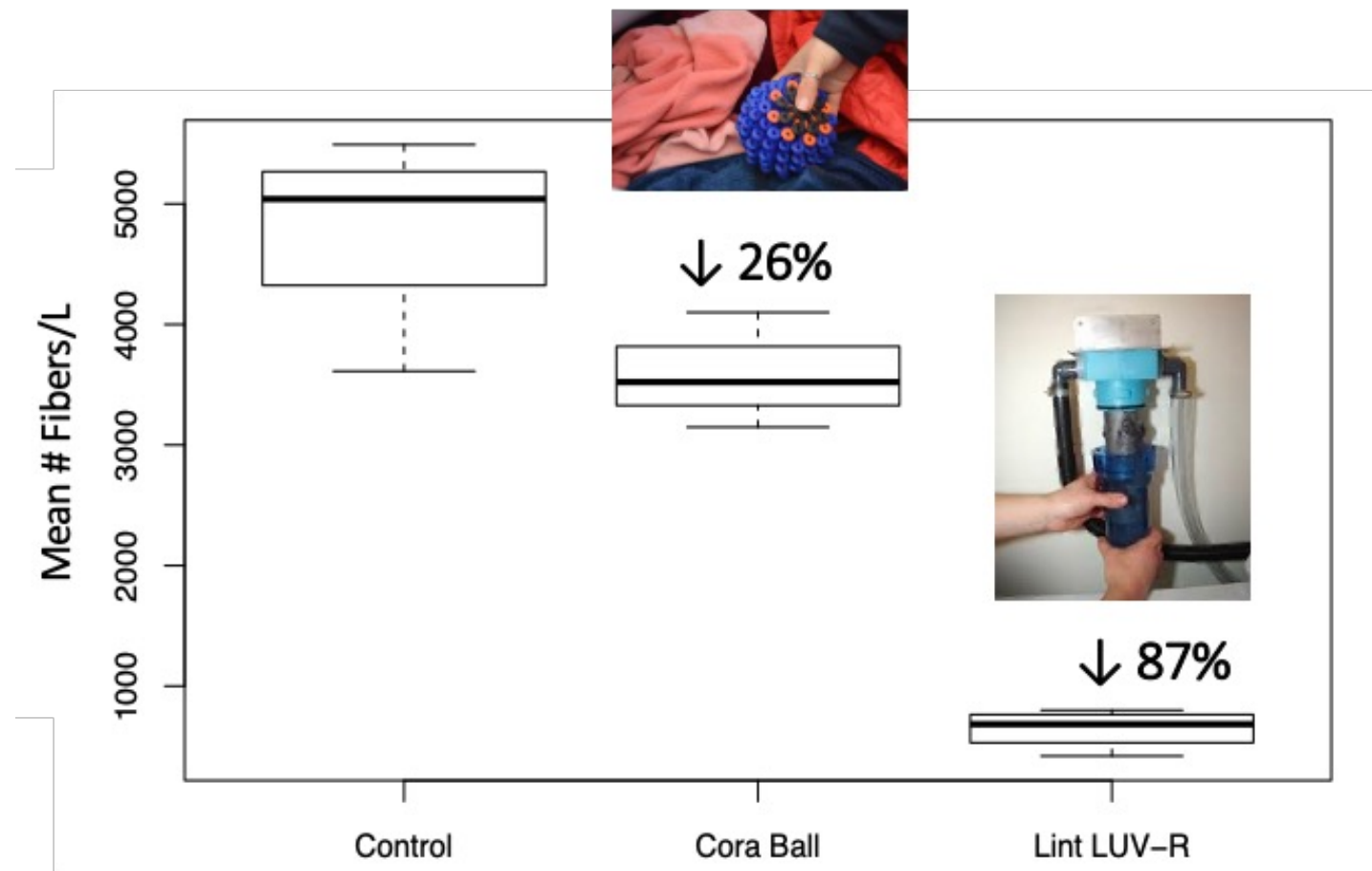


# SOLUTIONS WILL VARY BY SECTOR

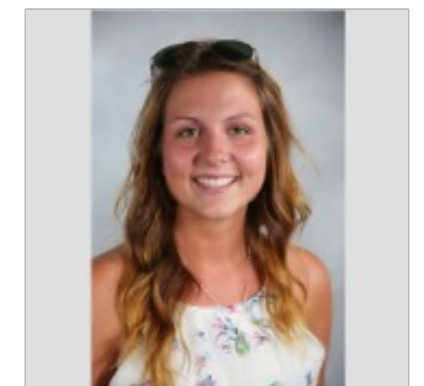


# MICROFIBER FILTERS IN THE LAB

2 strategies: both reduce microfibers in washing machine effluent



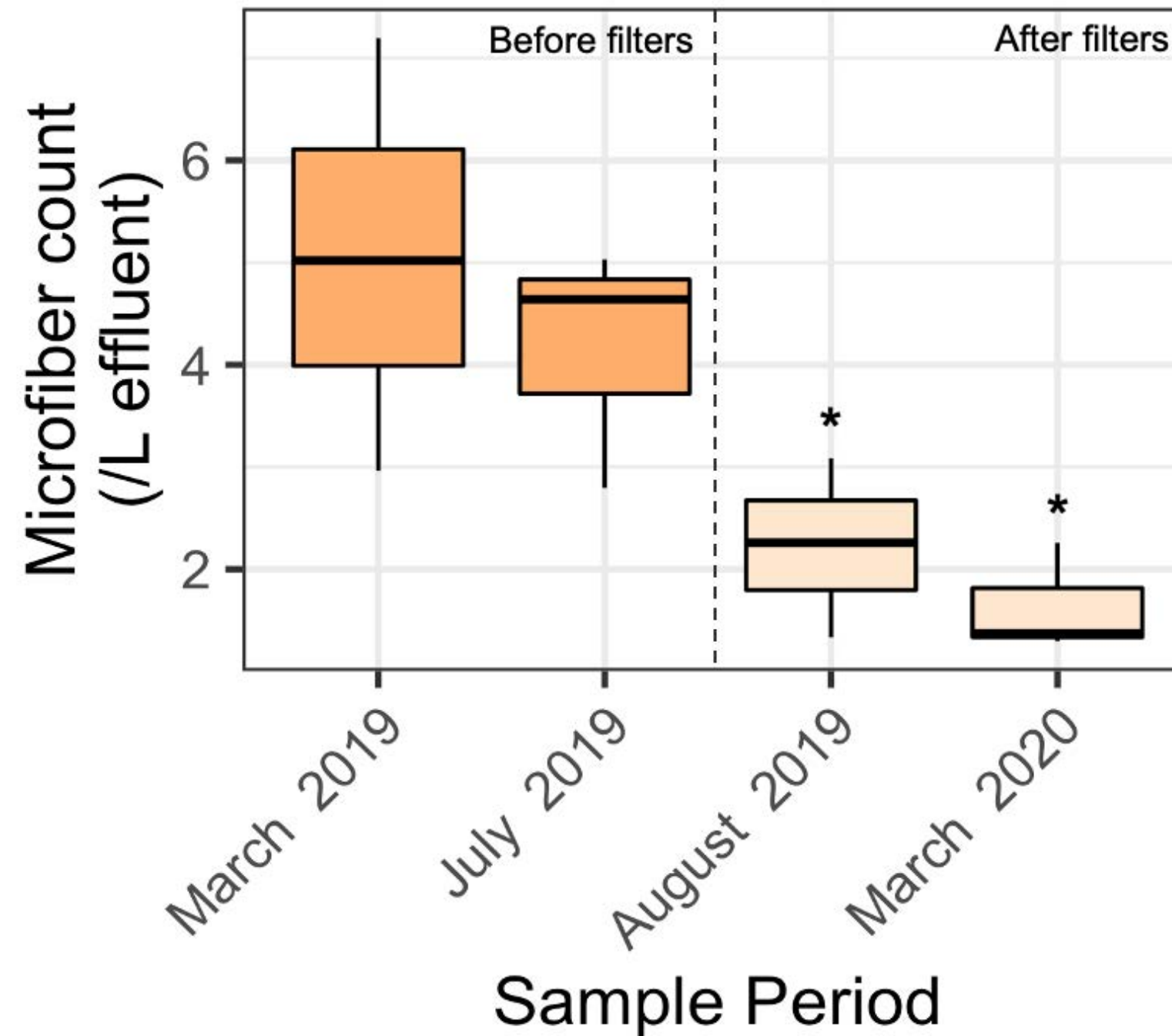
↓ 89% by weight



Sam Athey

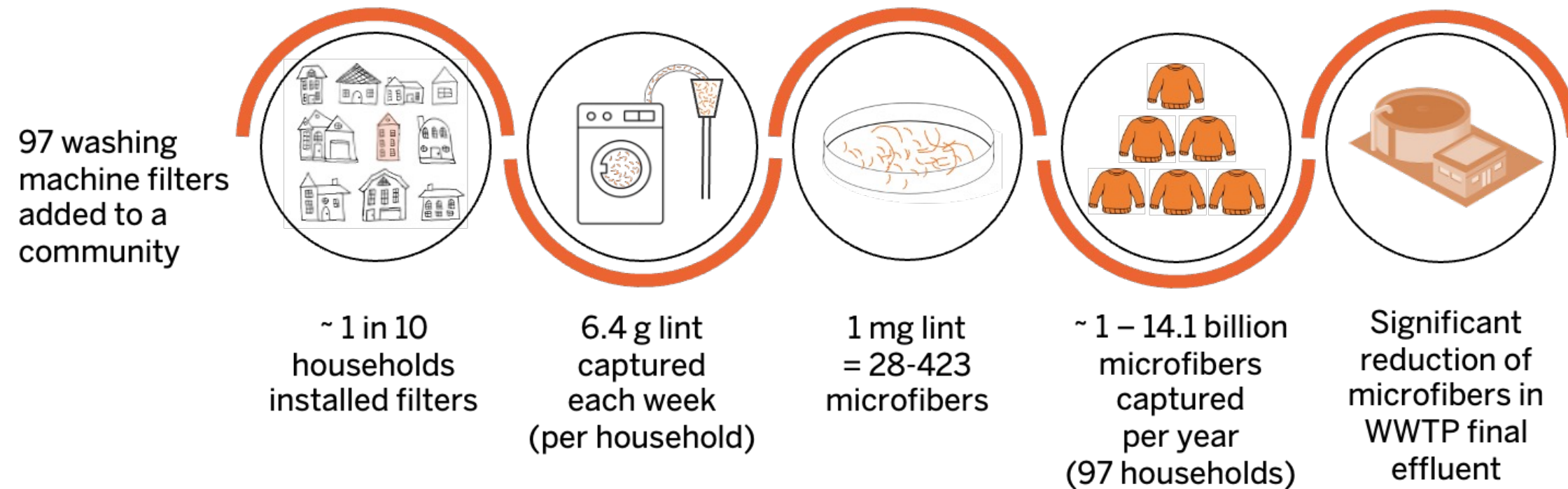


# MICROFIBER FILTERS IN A SMALL TOWN



3L composite samples  
per sample  
period (n = 3)

# FILTERS AT SCALE

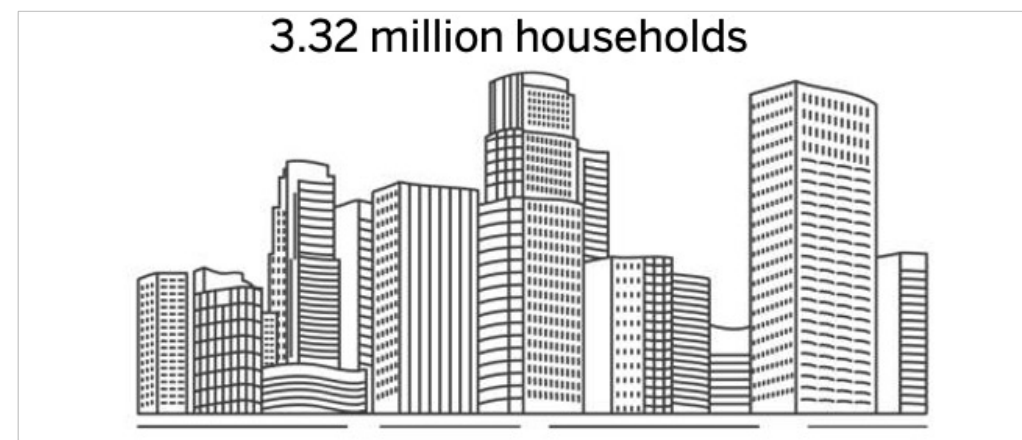


If filters were installed in **every household**:



12 - 166 trillion microfibers captured per year

## LOS ANGELES



30 - 468 trillion microfibers captured per year

Relevant policies to reduce microfiber emissions from washing machines:

- France 2020-105, Article 79 (passed)
- Ontario Bill 279 (introduced)
- California AB 1628 (introduced)
- UK Bill 205 (introduced)



# THANK YOU!

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Ben Von Wong, October 2021  
"Giant Plastic Tap"



# THE PROBLEM WITH MICROFIBERS

- A load of laundry = up to 18 million microfibers
- Microfibers enter aquatic and terrestrial ecosystems
- Microfiber contamination is ubiquitous; habitats, wildlife, and us!
- Effects include changes to growth, mortality, HSI, immune response, etc.

