

## SIX PILLARS OF DECARBONIZATION



### PILLAR THESIS

A new class of materials must be deployed at scale and using methods that are environmentally benign or restorative and rooted in a circularity. The Recycle Decarbonization Working Group will convene stakeholders quarterly to address critical questions in research and commercial scalability, producing insight to guide the future direction of the pillar.

### PILLAR CO-LEADS



Professor William Dichtel  
*Expertise: Polymer upcycling and materials innovation*



Professor John M. Torkelson  
*Expertise: Sustainable and upcyclable polymers/composites*

## INTERDISCIPLINARY EXPERTISE

Interdisciplinary faculty areas of expertise include:

Advanced upcycling/recycling | Biopolymer science | Consumer behavior and policy | Depolymerization | Lifecycle assessment | Novel polymer design and synthesis | Polymeric fibers and films

Faculty collaborators have been recognized for their academic excellence through awards and affiliations:

- National Academy of Engineering
- National Academy of Sciences
- National Academy of Inventors
- MacArthur Fellow
- Sloan Fellow
- Clarivate Highly Cited Researchers
- Northwestern University Associate Dean

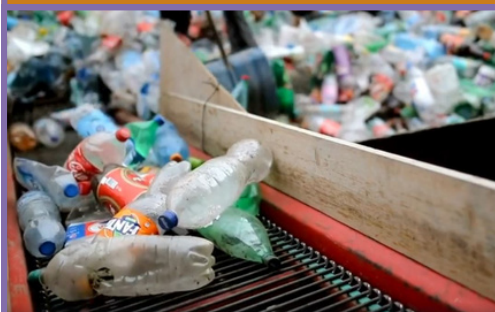
## NORTHWESTERN'S WORLD-CLASS EXCELLENCE

- Northwestern has top 5 Chemistry and Materials Science & Engineering programs in the U.S.
- Leading \$2.5M DOE effort with industry and Argonne National Lab focused on sustainable polymer design
- Leading \$1.6M DOE effort with BASF focused on polyurethane upcycling
- Trienens Institute's Program on Plastics, Ecosystems, & Public Health (PEPH) convenes global leaders from industry, research, and advocacy
- Northwestern is ranked #2 nationally for percentage of publications in top 10% of highly cited research in polymer science



### RECYCLE

both CO<sub>2</sub> and materials via circularity and polymer upcycling



### AREA OF FOCUS

Northwestern will lead in the creation of advanced polymers and processing methods for materials that will help solve the plastics pollution crisis and create a viable circular economic model at scale.