

### ***Current Project Team Members***

- Patricia Townsend, Ph.D., Associate Professor, WSU Extension
- Hang Liu, Ph.D., Associate Professor, WSU Department of Apparel, Merchandising, Design and Textiles
- Martha Aitken, Assistant Director, WSU Metropolitan Center for Applied Research and Extension
- Mark Beattie, Ph.D., Assistant Professor, WSU Carson College of Business, School of Hospitality Business Management
- Giuseppina Menconi, Ph.D., Associate Professor, Cesar Ritz Colleges Switzerland

### ***Issue***

The textile industry is the world's second largest polluter. While textiles may be repurposed through thrift stores and the rag industry, once they are used, their final destination is most often the landfill, increasing their negative environmental impact. Dr. Hang Liu, in WSU's Department of Apparel, Merchandising, Design and Textiles (AMDT), has created a groundbreaking [textile waste recycling technology](#) of turning post-consumer cotton waste into regenerated fibers to potentially break this cycle of waste. For textile recycling to achieve wide adoption and commercial success, a supply chain must be developed to address the following: opportunities for second uses, sourcing textile waste, preparing textiles for recycling, financial viability and economic benefit, and marketing and communication. Our team seeks to mitigate the environmental impacts of clothing and textile over-consumption and waste by creating new opportunities within Washington's circular economy.

### ***Recent activities***

In 2023, after conducting preliminary research in 2022, we focused our project on linens discarded by the hotel industry. We spent considerable time researching secondary markets for discarded linens. We received a grant from the Washington State Department of Commerce, and funding for an CAHNRS undergraduate intern from the School of Economic Sciences. We also received invaluable assistance from the Washington Hospitality Association, which allowed us to survey 37 hotels across the state. Our team completed the following tasks: 1) estimated the number of hotel linens discarded in WA state; 2) evaluated market potential of discarded linens; 3) tested the quality of discarded hotel sheets and towels compared to new linens to assess their suitability for secondary markets; 4) assessed policies that encourage reuse and repurposing of discarded linens and; 5) held a reinvention hack-a-thon, sponsored by the Pullman Marriott, open to AMDT students which encouraged them to design creative new products made from discarded hotel linens.

We believe this project was a successful pilot investigation into Washington State's market for linens discarded by hotels. Due to close ties between WSU and the Washington Hospitality Association, previously inaccessible survey data was gathered for critical analysis.

In 2024, we have focused on expanding our networks and stakeholders and researching hotel linen manufacturers to explore the possibility of creating a circular economy completely within the hospitality industry. Team members have made multiple state, national and international presentations, and submitted papers for publication.

Despite the progress we made, we have only scratched the surface of an immense topic. Success will require building new relationships, creating new networks, and designing workable systems. Multiple actors, dizzying coordination, and key market forces will all need to work in concert to create a sustainable circular economy. We do believe the current system can be improved, but it will take more time and resources. Each of our Dept. of Commerce project deliverables deserves further study on their own, and future research should strive to organize and connect market actors to physically implement the framework presented in our research.