



Circular Action for People and Planet: Using Coffee and Creativity in Innovative Networks and Operations (CAPPUCCINO)

Project Symposium Series

April 28, 2025



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CAPPUCCINO: U of Illinois



Coffee shop
outreach (local
middle school)



Medical waste
management &
sustainability



Food waste
management &
sustainability



Sustainable energy
sources (Sun
Buckets)



Food & Human
Health (Biome)



* Presentations
(March 7)



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Jasper Nord, Founder SporeCycle



Partner with local
cafes

Source coffee
grounds for
mushroom substrate



Grow Mushrooms
on
Grounds

Each Partner Café can
produce enough
grounds to feed 42
people a year!

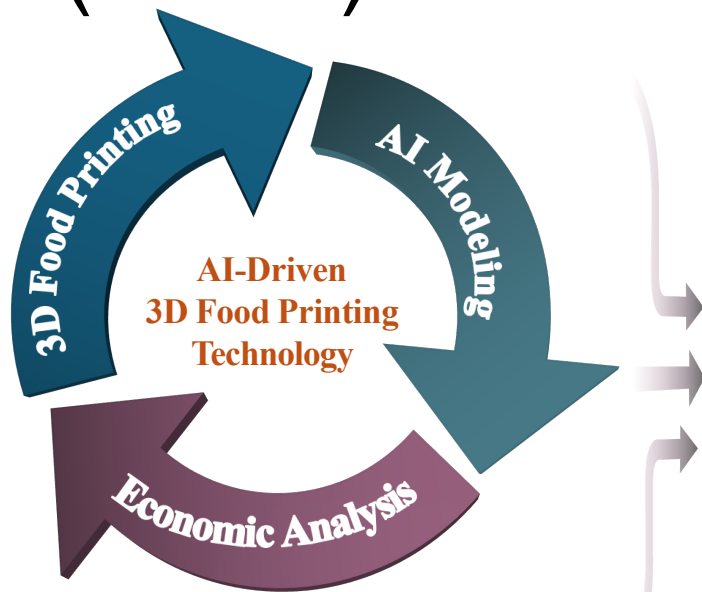


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AI-Driven 3D Food Printing with Upcycled Spent Coffee Grounds (SCGs)

Dr. Changmou Xu, Assistant Professor of Food Processing (UIUC)



Leveraging AI-driven 3D food printing to transform food waste into personalized, nutritious, and affordable foods

Why SCGs: Rich in Fiber, Antioxidants & Sustainable



Applications: Coffee-flavored high-fiber cookies, Dough-based breads, Protein bars, etc.



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Breakout Sessions- Symposium #1



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Coffee Production Stakeholder

- Farmer and Producer
- Government Entities
- Certification Bodies
- Traders
- Roasters
- Retailers & Cafés
- Consumers



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Coffee Upcycling: "Good Waste" Management

- SWOT Analysis
- Whole Ecosystem
 - Physical systems
 - Human biome



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Readout

- Farmers/Producer
- Packaging
- Roaster
- Retailers/Café



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Readout

- System of System (whole system performance)
 - Physical System
 - Human biome
- Climate change impacting the coffee supply-side
- Pathogen threats
- Efficient harvesting (tree shaking)
- Food justice for small farmers (supporting local economy)
- Energy needs
- Technical barriers & Social barriers in supply chain
- Café as a Third-Space (social “community” impact of coffee)
- Focus on local partners
- Animal feed from SCG



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Readout—Symposium #2

- SCG in innovation management (course development)
 - Utilized unspent coffee grounds as main raw materials for the course
 - Ask Beth and Jasper
- Learning -> Idea -> Action -< Reflection
- Innovation competition
- SCGs organic waste was the coffee ground just there.
- Citizen scientists --- People in this space.
- Volunteer network
- Sustainability – policy, STEM, etc. -> lenses
- Cross- Birmingham and UIUC student advisory groups



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Readout—Symposium #3

- SCG in innovation management (course development)
 - Utilized unspent coffee grounds as main raw materials for the course
 - Ask Beth and Jasper
- Learning -> Idea -> Action -< Reflection
- Innovation competition
- SCGs organic waste was the coffee ground just there.
- Citizen scientists --- People in this space.
- Volunteer network
- Sustainability – policy, STEM, etc. -> lenses
- Cross- Birmingham and UIUC student advisory groups
- Collection Phase->Processing Phase->Translation Phase



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