Q&A: Usage of 'upcycled food' grows in popularity
29 June 2020, by Alissa Falcone

You might have been eating or creating "upcycled food," but it wasn't until very recently that the term was actually, officially defined. Last month, a special task force convened by Upcycled Food Association, an organization made of academic, nonprofit and industry stakeholders—including researchers from Drexel University—released an official meaning for the phrase:

"Upcycled foods use ingredients that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment."

Ben Gray, chief operating officer of the Upcycled Food Association, says, "Having an independent, parallel research effort was integral to ensuring the definition accurately reflected a wide range of stakeholders. This definition serves as a foundational document for governments, nonprofits, members of the food industry, academia, and others to clearly communicate the potential of Upcycled Food and help put all food to its highest and best use."

A concrete and universal definition could lead to further recognition for something that partly got its start at Drexel years ago. Back in 2017, College of Nursing and Health Professions Professor Jonathan Deutsch, Ph.D., partnered with Rajneesh Suri, Ph.D., vice dean for research and strategic partnerships and a professor of marketing in the LeBow College of Business, and Hasan Ayaz, Ph.D., an associate professor in the School of Biomedical Engineering, Science and Health System, to publish a paper demonstrating that consumers would be open to using a new category of foods created from discarded ingredients—sound familiar? Deutsch, at that time, had already been producing upcycled foods with the Drexel Food Lab, a food product development and culinary innovation lab that he directs and co-founded in 2014.

Now, a few years later, Deutsch was one of the Upcycled Food Association task force members who helped define what "upcycled" food was. Recent Pennoni Honors College Custom-Designed Major graduate Olivia Spratt was on that task force too, and her senior capstone project surveying and interviewing industry leaders to define "upcycled food products" was used in forming the final definition of upcycled foods.

"What I found especially exciting about Olivia's senior capstone project was that it exemplified the goals and the nature of the custom-designed major," said Pennoni Honors College Director of Academic Programs Kevin Egan, Ph.D. "Olivia took a specified problem and was able to approach it holistically; having studied culinary arts and food science, along with public health, environmental science, and environmental studies and sustainability—and thinking about how all of these areas intersect at the nexus of upcycled foods—enabled Olivia to approach the problem of a definition in a really comprehensive way."

Spratt's senior capstone project had another real-
world application: It was recently submitted to the *Journal of Culinary Science & Technology*.

"I learned so much from Olivia's capstone project for Custom-Design on upcycled food," said Pennoni Honors College Dean Paula Marantz Cohen. "It is an inspiring subject that I hope she will continue to forward as she moves into the workplace or on to graduate school. I'm so proud of her accomplishments, and commend the Pennoni team, headed by Dr. Kevin Egan and Dr. Katie Barak, and by her advisor, Dr. Jonathan Deutsch."

DrexelNow talked to Deutsch and Spratt about their involvement with getting "upcycled food" formally recognized, and what that means, both specifically within the food industry and generally to consumers.

**DN: Jon, I know you've been working with upcycled food for a while now, right?**

Jonathan Deutsch (JD): For the last couple of years, the Drexel Food Lab has had a lot of our projects deal with providing technical assistance and product development work for upcycled food. Actually, when [Interim Nina Henderson] Provost Paul Jensen was the interim director of the Center for Hospitality and Sport Management, he saw what we were doing in the Food Lab and was really excited about it. He connected me with Suri, and that helped broaden our research group. We ended up doing a study led by Siddharth Bhatt, who was a Ph.D. student in marketing and is now an assistant professor at Penn State Harrisburg, and also featured Ayaz. Back then, there wasn't really an agreed upon term for "upcycled;" the words that were used were "salvaged," "rescued," "recycled," or "repurposed," in addition to "upcycling."

Our research was really influential in establishing that consumers preferred the term "upcycled." So that was like step one. It's not that we can take real credit for anything because upcycled is a widely used term. Most people say it comes from fashion; "recycling" would be taking old clothes and making rags out of them, and "upcycling" would be taking old jeans and making a jean skirt that would have become rags otherwise. Upcycling for food is kind of the same way. Recycling food might be to turn surplus food into compost so it fertilizes new food, but upcycling would be to take that food and divert it from compost to a more valuable product.

After that research, we started using that term and the industry started using that term. Before that paper, one of our products was with Philabundance and it was called "Rescued Relish," because the term "upcycled" was not that widely used and we didn't have the research base. Partly based on that research from the 2017 paper, Philabundance rebranded their products as "Abundantly Good," and their tagline, if you look under the "Abundantly Good" logo, is "Upcycle and uplift." Recently, Caroline Cotto, who's the CEO of Renewal Mill, mentioned that she was also referencing that paper in her slide decks to talk about upcycling. Renewal Mill had used the term "renewed food," and then after that research, she started calling her food "upcycled," too. So it was influential, I think.

**DN: What happened recently that led to an official definition?**

JD: In May 2019, I led a Claneil Foundation-sponsored panel of upcyclers at Waste Expo, which is a conference food recovery conference. They all said, let's keep this conversation going and let's keep talking. And there was a concurrent effort on the West Coast to start a group of upcyclers. Those efforts combined and became the Upcycled Food Association. That organization met for the first time in October 2019 at the ReFED Food Waste Summit in San Francisco.

One of the first agenda items of the board was to figure out what upcycling really is. At that same time, Olivia was looking for a senior project and had been working with us in the Food Lab. I suggested this as a project and then she took it and ran with it.

Olivia Spratt (OS): When I started working at the Food Lab, I was drawn to all the food waste projects because of the link between food and the environment and waste reduction. I thought upcycling was really interesting.

My project dealt more with defining upcycled food products than defining the word "upcycled." But I worked alongside the Upcycled Food

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Association—not directly with them, but in partnership—to develop my study. I worked with members of the Upcycled Food Association to do all the research, so they were my study participants. We did multiple rounds of questionnaires and interviews. It started off with Zoom interviews where I asked a specific set of questions to get everyone's general idea of what they thought would be included in a definition of upcycled food products. And then from that, I pulled out the major themes from all those interviews. I developed a questionnaire survey that basically outlined all the major themes and asked people to give their opinions on what was most important. From there, I picked out the three most important concepts that everybody thought should be in the definition. I developed a definition, sent it out and then got everyone's feedback and did that a few times and then arrived at a found definition.

The final definition was "Upcycled ingredients and food products elevate food that would otherwise be wasted to higher uses and have tangible benefits to the environment and society."

That was the summer before my senior year, and then I worked on it during fall and winter, too, because I graduated after winter term.

JD: Olivia did her research independently of the Upcycled Food Association—it was neutral, third-party and they didn't fund it or influence it in any way. We were sort of an outside pro-bono consultant, and we were part of the task force within the Upcycled Food Association tasked with creating a definition to be adopted by its board. The task force was a really impressive group of people, led by Ben Gray, who's the COO of Upcycled Food Association with guiding support from Emily Broad Leib, a law professor from Harvard University and director of the Harvard Food Law and Policy Clinic. There were also people from the Natural Resources Defense Council, World Wildlife Fund and all sorts of non-profit experts and people in academia. Emily Broad Leib and her legal student created a report that is inclusive of Olivia's work, but takes it a lot further from a legal perspective.

OS: I feel like I found out more about "upcycled" meant while I was doing this study. I obviously knew why the association wanted a definition: it was mainly for communication with consumers, so that consumers can understand what upcycling is, but also so that there's a universal idea within the industry. But then as I was doing this work, I found a lot of little nuances to it that I didn't expect to come up and were really important to work out. There are certain terms that the participants didn't want at all associated with the definition, like "value added," which had been used before—if you had an upcycled product, it would be taking an ingredient that would have otherwise been wasted, and making it a value added product. But for pretty much everyone I interviewed, that term was just too vague and some people just didn't like that at all. We ran into many similar semantic issues, which further emphasized the importance of having a concrete and universal definition in the industry.

JD: For me, I think it's really important to define this to communicate what these products are to consumers. Our 2017 paper really showed that consumers consider upcycled food its own unique category of food products and has some benefits over conventional food in terms of its perception for goodness, environmental goodness and nutrition and so on. But we really needed to help them understand what that is in a succinct way. I think the definition is important for that.

It's also important to protect the brands who are doing true upcycling and were pioneers in this field because we've seen as upcycling is getting popular, a lot of other brands are just saying, "Oh, well, why don't we call ourselves upcycled too? That might look good." It's important to have a really clear definition because this is not a term that's regulated by the FDA or the FTC or anyone else at this point. The industry saw an opportunity to self-regulate.

And then now that we've defined it, we can actually measure and develop measurements for environmental impact and the kind of social value of upcycling. The next step in this process for the Upcycled Food Association is to form a standards committee to create a third-party verification system so that just like when you see an organic symbol or
a non-GMO symbol or something like that on a package, there eventually could be a certified upcycled symbol. But in order for that symbol to be meaningful, it has to be based on an agreed-upon standard.

DN: I know it's a weird time to ask about next steps in the future, but are there other "next steps" that you are planning?

OS: I think as far as the association goes, I always knew that that research was being done on my end and on their end to benefit a certification program, potentially.

JD: In terms of the bigger research group with the Drexel partners, Drs. Suri and Ayaz, we're continuing to work on consumer perceptions about upcycled food. We just had a second paper accepted to the Journal of Consumer Behavior that's separate from Olivia's work. It's about consumer perceptions of different logos. So, if it's a green upcycled logo on a package, does that read differently from a white upcycled logo package? Do people struggle to differentiate between conventional and upcycled products, or is it a quick and kind of instinctive move towards the one that's upcycled? We're looking at those kinds of questions from the marketing perspective.


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