

## Building sustainable food systems through food hubs: Practitioner and academic perspectives

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### Abstract

In this paper, we explore the current state of the food hub by discussing innovative practices

supporting efforts to build healthy, equitable, and sustainable food systems. We present key insights from a roundtable discussion among scholars and

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practitioners from Australia, Canada, and the United States held during the 2017 Annual Meeting of the American Association of Geographers. Our discussion presents a food hub continuum that describes different pathways to effect change, from enhancing food supply chains to challenging the negative outcomes of the dominant food system through a social and ecological justice approach. This perspective problematizes typical descriptions of food hubs by recognizing the different goals and objectives as well as the resulting opportunities, challenges, and innovations. While we do not suggest one end of the continuum is more important than the other, we identify a series of productive tensions that emerge. Our discussion is structured around four central themes from the collaborative conversation: (1) Descriptions of food hubs; (2) Differing objectives; (3) Navigating success; and, (4) Encountering barriers. We conclude with suggestions on ways to bolster the work of food hubs through research, policy change, and greater collaboration. This contribution is significant for bridging the overlapping yet diverging conversation between scholarship and practice to better inform food hub development.

### **Keywords**

Academic; Food Hub; Food Movements; Food Systems; Practitioner; Social Justice; Sustainability

### **Introduction**

Over the past decade, interest in food hubs has gained significant traction in communities and among policymakers, governments, and researchers. In 2013, the United States National Food Hub survey identified 222 food hubs (Fischer, Hamm, Pirog, Fisk, Farbman, & Kiraly, 2013), and by 2015, there were well over 400 (Hardy Hamm, Pirog, Fisk, Farbman, & Fischer, 2016).<sup>1</sup> In Canada, a recent survey found 187 operations identifying as food hubs in Ontario alone (Centre for Sustainable Food Systems [CSFS], 2016). This paper explores the current state of food hubs by discussing innovative

practices supporting efforts to build healthy, equitable, and sustainable food systems. We present key insights from a collaborative roundtable discussion among academics and community practitioners held as part of the 2017 Annual Meeting of the American Association of Geographers (AAG) in Boston. The goal of the session was to address critical questions by putting research and theory into conversation through the experiences of those coordinating and advocating for food hubs. Reflecting on the emerging debates, this paper presents unique perspectives from scholars and practitioners at the forefront of food hub work in Australia, Canada, and the United States. While scholarly research can often be disconnected from the experiences of practitioners, food hub managers often have limited time and capacity for thoughtful reflection about their work and to consider their impact on the broader food system. Thus, the contribution of this paper is significant for bringing together overlapping and divergent perspectives from scholars and practitioners to better understand and inform food hub development.

Following a description of the processes behind the collaborative conversation hosted at the AAG as well as a description of our analytical approach, we discuss the central themes that emerged in relation to the existing academic literature. Our discussion presents a food hub continuum that describes different pathways to effect change, from enhancing food supply chains to challenging the negative outcomes of the dominant food system through a social and ecological justice approach. While the mission of particular food hubs may be aligned with one end of the continuum, they are often pulled in different directions by competing economic and social forces. This perspective problematizes typical descriptions of food hubs by recognizing the different goals and objectives as well as the resulting opportunities, challenges, and innovations. While we do not suggest one end of the continuum is more important than the other, our analysis identifies a series of

the number of food hubs, this figure also reflects the successful identification of additional hubs, some of which existed before the 2013 survey.

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<sup>1</sup> The survey is conducted by the Michigan State's Center for Regional Food Systems and Wallace Center at Winrock International. Of note, while there was significant growth in

productive tensions that emerge. We conclude with suggestions on ways to bolster the work of food hubs through research, policy change, and greater collaboration. We argue that bringing together the knowledge and experiences of both scholars and practitioners can make an important contribution to understanding factors that contribute to a food hub's impact. This paper, and the roundtable from which it emerged, bring these different perspectives into conversation to better understand ways in which academic research can contribute to addressing food hub challenges, in which practitioners can lend insights to gaps in the literature, and in which new avenues for academic-practitioner collaboration can be identified.

## Methods

To interrogate the developments, opportunities and challenges surrounding food hubs, Charles Levkoe and Colleen Hammelman organized a session at the AAG that brought together practitioners and researchers involved with food hubs in Australia, Canada, and the United States. The session was convened in response to a recognition among members of the AAG's Geographies of Food and Agriculture Specialty Group (GFASG) of the growing importance of food hubs and emerging questions surrounding their current and future functions. To determine the composition of the panel, we contacted GFASG members to identify individuals and organizations that were leaders in the field and could speak to food hubs both from scholarly and applied perspectives. Considering the many recommendations, we selected national leaders (such as Jeff Farbman), those involved in sustained and engaged research (such as Phil Mount and Luke Craven), and those actively coordinating innovative and well-respected food hubs (such as James Harrison and Gavin Dandy). We also attempted to strike a balance in representation between academics and practitioners.

Prior to the roundtable discussion, the group met virtually to discuss the major issues that would be addressed in the session. The organizers asked

the panelists to draw on their experiences when considering the challenges of expanding their work as well as the resources, policy changes, and research that could help to overcome prevailing challenges. Each participant was asked to prepare a short presentation that considered the following key questions: How are food hubs addressing structural challenges in the food system? What resources, research, and policy changes are needed to support the further development of these models? During the session, each participant presented their initial responses to these questions before the floor was opened to comments and questions from members of the audience.<sup>2</sup>

The roundtable discussion was recorded and transcribed verbatim. Levkoe and Hammelman individually reviewed the transcript to identify dominant themes emerging from the discussion. Accordingly, the transcripts were coded and organized into a coherent outline and written into a draft manuscript. The remaining authors (all panelists in the session) provided editorial feedback on the draft. The resulting structure of the paper is based on the conversations that took place during the discussion and presented as a series of direct quotes and a synthesized analysis. Throughout the text, we describe emerging tensions by articulating the work of food hubs through a continuum that describes different pathways to effect change, from enhancing food supply chains to challenging the negative outcomes of the dominant food system through a social and ecological justice approach. In this paper, we present insights from the collaborative conversation through four key themes: (1) Descriptions of food hubs; (2) differing objectives; (3) navigating success; and (4) encountering barriers. In order to highlight the various contributions made to the conversation, we rely on a series of direct quotes from the panelists. Doing so provides their perspectives without unnecessary academic interpretation. We believe this approach preserves the valuable insights that emerged from engaging the relationship between the scholarly literature and the experiences of practitioners.

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<sup>2</sup> The 100-minute session, titled "Food hubs building sustainable communities: Activist-scholar roundtable," was open to all conference attendees and promoted by the

GFASG. Approximately 50 people attended the roundtable presentation and participated in the ensuing discussion.

Through our analysis, we integrate these insights to highlight points of cohesion, gaps, and avenues for future collaboration.

## I. Descriptions of Food Hubs

The most widely accepted definition of a food hub comes from the U.S. Department of Agriculture which describes them as “a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand” (Barham, Tropp, Enterline, Farbman, Fisk, & Kiraly, 2012, p. 4). While many food hubs responding to a specific lack of infrastructure would likely recognize themselves in this definition, many others explicitly aim to address a much broader range of social, economic, and ecological concerns. These include ensuring access to culturally appropriate and healthy food, fostering local decision-making power, keeping money within the community, providing good jobs, and encouraging ecological sensitive production practices. Incorporating these kinds of goals and objectives, Blay-Palmer, Landman, Knezevic, and Hayhurst (2013) describe food hubs more broadly as, “networks and inter-sections of grassroots, community-based organizations and individuals that work together to build increasingly socially just, economically robust, and ecologically sound food systems that connect farmers with consumers as directly as possible” (p. 524). At the core of this description is the idea that while there are key elements within the food supply chain that most food hubs are responding to, many address issues that go well beyond food. The roundtable discussion added further insight by making it clear that no single definition could fit all food hubs. Instead, the different goals and objectives exist on a continuum that describes different pathways to change, from enhancing food supply chains to challenging the negative outcomes of the dominant food system through a social and ecological justice approach. For example, one of the participants proposed a food hub definition that fit much more closely with a focus on supply chains, while another pointed to shifts towards a much broader range of functions.

**Farbman:** At the Wallace Centre at Winrock International (<http://www.wallacecenter.org>), our definition of a food hub follows the USDA’s definition which is quite business-oriented. For us, a food hub is an aggregator, distributor, and marketer of primarily local food with the intention of scaling up markets. That can range from institutional markets to working with larger food box programs. The archetypical hub might have a warehouse, a few box trucks, approximately 40 farmers and/or suppliers, and a similar number of wholesale buyers, as well as a means for selling directly to consumers (e.g., a CSA-style box program, a buying club, etc.). There might be a couple of warehouse staff, some drivers, a small sales team, and a small purchasing team (though sometimes “team” is less than a single full-time equivalent staff).

**Mount:** We have been doing research on food hubs in Ontario for over a decade now. The description of what a food hub is has changed a lot over that time, so it might be better to think of the definition as a moving target. The definition that we used for our food hub research also reflects the USDA definition. Our working definition was, “Food hubs are actual or virtual places through which food is collected and resold to processors, retailers, or restaurants. Food hubs can also provide space for other food-related activities, including food preparation, handling and/or processing.” Unlike traditional businesses models, the work of a food hub often moves beyond a straightforward link in the supply chain. Food hubs are complex beasts and often do more than just aggregate and distribute food.

Three of the roundtable participants discussed food hubs’ explicit intentions of systems change and the fluidity with which they fit onto the continuum.

**Farbman:** Rich Pirog of the Center for Regional Food Systems at Michigan State University is quoted as saying, “you’ve seen

one food hub, you've seen one food hub.” This idea emphasizes the wide diversity of food hub models.

**Craven:** From my experience in Australia, a food hub is about a range of issues and activities and not always primarily about food. This might include food access for lower-income people, social justice, and a series of collaborative processes that draws various initiatives together with and through food hubs.

**Dandy:** The two food hubs I coordinate, Everdale and The Seed, share a number of characteristics of the various definitions presented already. They focus on the aggregation, storage, processing, distribution, and/or marketing of locally or regionally produced food products along with community development and building healthy, equitable, and sustainable food systems. Everdale's urban and rural teaching farms and The Seed's multi-location hub project are hybrids, combining different ingredients of the food hub archetypes into a unique local recipe. They reflect the cultural and demographic subtleties and particular resources of the communities they serve. They also express the personalities and convictions of their staff

and volunteers. As such, no two food hubs are alike—and this is as it should be. Embracing diversity is the key to success.

These perspectives fit closely with the work of Berti and Mulligan (2016) who addressed these differing definitions in their review of the food hub literature. The practitioner perspectives from the roundtable add to that discussion by highlighting the fluidity between the definitions and the corresponding tensions that can exist within a single food hub. As Dandy pointed out above, the particular definition a food hub aligns with is not always clear. Many food hubs align themselves with different definitions at different times in their development, and their activities and orientations may shift along the continuum in a fluid manner. These perspectives are emblematic of debates in the literature that have pushed for more expansive food hub definitions. This includes viewing food hubs as an integral part of networks that strive for food security, food justice, and food sovereignty via direct connections between producers and eaters, working more closely with natural systems, and advocating for democratic decision-making power in food systems. Figure 1 provides illustrative descriptions of these diverse efforts.

These examples present the range of food hub goals and objectives, from the supply chain-focused Red Tomato to the social and ecological

**Figure 1. Some Examples of Innovative Food Hubs Described by Roundtable Panelists**

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Red Tomato, Plainville, MA, <http://www.redtomato.org/>

Farbman:

Red Tomato is a food hub with no warehouse and no trucks. However, the hub still actively manages the aggregation, distribution, and marketing of local products along with the sales. It's a type of "brokering plus," because they are doing far more than just making connections, they are supporting the whole partnership process to ensure food gets to where it needs to be.

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FoodShare, Toronto, ON, <http://www.foodshare.net>

Mount:

We are involved with a food hub run by FoodShare, a large not-for-profit social enterprise that operates the Good Food Warehouse. In partnership with agencies across the city, FoodShare runs a series of food programs that delivers 30,000 boxes with over 670lbs of fresh produce to 100 drop-off points across the city. Through facilitating regional food distribution, FoodShare offers an economy of scale, efficiencies in cost savings, support for local business, local economic development. Through their programs, they increase access to fresh local food and to food system knowledge. This includes programming in student nutrition, food justice, facilitating community gardens, composting, mobile markets in low income neighborhoods, school-based programming, growing food on rooftops and school yards, and baby and toddler nutrition, to name just a few.

*continued*

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Two Rivers Food Hub, Smith Falls, ON, <http://www.tworiversfoodhub.com>

Mount:

Two Rivers is a not-for-profit social enterprise with a mission to increase markets for local farms. This is a more conventional model of a small regional aggregator and distributor that emerged when a regional health care facility was abandoned by the government in 2008. Two Rivers had access to a large commercial scale kitchen and equipment for processing excess produce. With aggregate product from small local growers, they developed a food basket and added beef from a local co-op that needed marketing support. Two Rivers has an online market and delivers to various depots across the region.

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Everdale's Hillsburgh Community Farm, Hillsburgh, ON, <http://www.everdale.org>

Dandy:

Located in a relatively prosperous, rural community just northwest of Toronto, Hillsburgh Community Farm is a very productive not-for-profit operation that grows, buys, and distributes a large volume of fresh food, and offers a well-crafted menu of food skills programs that focus mainly on training new agroecological farmers and teaching food literacy skills to youth.

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Black Creek Community Farm, Toronto, ON, <http://www.blackcreekfarm.ca>

Dandy:

Located in one of Toronto's lowest income and most racialized neighborhoods, Black Creek Community Farm is a seven-acre farm nestled between high-rise apartment buildings, public housing units, York University's main campus, and a newly constructed extension of the subway system. It is focused on maximizing food production, but it has a much sharper focus on food justice, the sharing of multi-cultural food skills, and community governance.

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The SEED, Guelph, ON, <http://www.theseedguelph.ca>

Dandy:

The SEED is an innovative food hub without a physical location. Its programs and services—mainly focused on fresh food access and food skills for people experiencing food insecurity—are delivered in several locations. As such these programs tend to reflect the unique qualities of the neighborhoods where they are located. For example, Guelph Youth Farm (a project of The SEED and Everdale) is located in the Onward Willow neighborhood, identified by Public Health as one of the four priority neighborhoods in Guelph. The farm is run by and for low income youth and has a food justice focus.

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The Food Project, Boston, MA, <http://www.thefoodproject.org>

Harrison:

Twenty-six years ago, The Food Project emerged from a friendship between an African-American Minister and a white farmer with a vision of bringing young people together across class, race, and geographic difference to grow fresh healthy food. Its mission is to create a thoughtful and productive community of youth and adults from diverse backgrounds to build equitable and sustainable food systems. This includes hiring over 120 teenagers every year and building teams of young people that are representative of the regional communities. We farm on over 70 acres of land in Boston and the surrounding area and grow about 250,000lbs of food annually. One major success has been a direct farm-to-consumer matching program that began in 2005 when we got one of the first wireless terminals at our farmer's market that could accept SNAP benefits.<sup>3</sup> After the first year, we were disappointed by the volume of sales and wanted to find a way of making local food more accessible and affordable for SNAP recipients. To make this work for low-income residents, we created a demand-side subsidy in the form of a dollar-for-dollar match when people used SNAP benefits at the farmer's market. It was great for our farmers and customers because it added these additional dollars into the local economy. We scaled this out to become the Boston Bounty Bucks program which is now operating at twenty-three farmers markets and funded by the City of Boston. From there, we developed partnerships in other states, and now there is US\$100 million in funding around the country provided by the last Farm Bill. We have also developed partnerships with community development agencies, a nonprofit food processor, and early education centers.

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justice orientation of the Food Project (and many in between). These varying types of food hubs fit within different parts of the continuum, and the differences between them are important to

articulate and reflect on. Where a food hub falls along the continuum and how that matches stakeholder definitions has implications for the outcomes expected of specific operations. When

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<sup>3</sup> The Supplemental Nutrition Assistance Program (SNAP) is part of a government program that offers nutrition assistance to eligible, low-income individuals and families and provides

economic benefits to communities (see <http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap>).

investors, policymakers, and other stakeholders measure the success of food hubs, the criteria of a business-focused, supply chain-oriented food hub may be different than one primarily focused on social and ecological justice. Accordingly, the next section describes the differing objectives that arise in response to food hub types and stakeholder expectations.

## II. Differing Objectives

A growing body of literature has explored the various contexts in which food hubs arise which often follows from differing objectives (Azzarello et al., 2012; Barham et al., 2012; Cleveland, Müller, Tranovich, Mazaroli, & Hinson, 2014; Horst, Ringstrom, Tyman, Ward, Werner, & Born, 2011; Rimal, Muzinic, Onyango, & Duitsman, 2016; Stevenson, Clancy, King, Lev, Ostrom, 2011). Food hubs tend to emerge from a regional context to meet the needs of a specific group of people rooted to a particular place. In most cases, they are based on a general desire to contest the dictates of the corporate, industrial food system and create collective solutions that meet one or more specific needs (Berti & Mulligan, 2016; Perrett & Jackson, 2016; Stroink & Nelson, 2013). Many have physical locations where food is aggregated, processed and/or distributed, while others use internet technology to connect members. Food hubs can range in scale and often operate within both mainstream and alternative markets (Cleveland et al., 2014; Knigge, Brimlow, & Metcalf, 2016).

Differing food hub orientations toward enhancing the supply chain or challenging the negative outcomes of the dominant food system were particularly evident in the conversation on the objectives of specific models and the work more generally. This discussion builds on the pathways to change continuum by highlighting tensions that arise from perceiving food hubs as part of the market economy and a driver of economic development or as agents of social justice and ecological sustainability. For example, Farbman saw food hubs as an opportunity for responsible economic development:

At the Wallace Centre, we are interested in

market-based solutions to increasing the supply of what we call “good food,” that is healthy, fair, affordable and environmentally sound options in the food system. Our focus is on scaling-up. Local food has its limitations because there is limited supply and you can’t just import new farmers. At the same time, you have limited demand because you can’t import new buyers. This generates an environment conducive to a transparent business model, what we call a “values-based supply chain,” where farmers can use a food hub to coordinate with the larger scale buyers so they know what to grow. It creates a virtuous cycle. I would also say a food hub is a supply chain coordinator connecting supply and demand, plus infrastructure, plus investment in building relationships.

Farbman also reported on economic objectives alongside food system change goals. He discussed a National Food Hub survey that found that 75% of food hubs have operating expenses that are less than or equal to their gross revenue (i.e., breaking even or better). The survey also reported that “mission-based goals” (e.g., social justice and community development) were increasing. He argued, “Food hubs are adding revenue year-over-year, and new hubs are springing up all over the place, so growth is strong.”

Scholars and practitioners have argued for the need to better understand the economic performance of food hubs (Farm Credit East, Wallace Center at Winrock International, Morse Marketing Connections, and Farm Council, 2015; Hardy et al., 2016; Jablonski, Schmit, & Kay, 2016; Schmit & Jablonski, 2017). For example, Hardy et al. (2016) found that three-quarters of food hubs in a US National Food Hub survey were breaking even or better. However, Farm Credit East, Wallace Center at Winrock International, Morse Marketing Connections, and Farm Council (2015) argued that food hubs could perform even better with increased efficiency. These economic goals are critical for sustaining many food hubs.

Alternatively, other roundtable panelists named social and ecological justice at the core of their food hub work.

**Mount:** From our survey in Ontario, we found that food hubs were highly motivated to support sustainable food systems. More than 80% of respondents prioritized responsible, sustainable production practices and where products were grown. Further, more than 60% identified social justice as a priority over profitability.

**Harrison:** Despite being progressive, Boston still struggles with being a very racially segregated city. The Food Project's founders saw working with youth as a starting point for breaking down barriers. Growing and distributing food is a way to bring people together across class and race differences. We can't have systems change if people aren't talking to each other and aren't in relationship.

**Dandy:** For both Everdale and The Seed, the main priority is food justice. Food production is the foundation of all of our food hubs. Our community farms generate income, create employment, stimulate leadership, and galvanize community learning and engagement. We believe that the current global food system is deeply flawed, but we also believe that it is essential that to work within this system. We love the social enterprise model for our farms. It stimulates food justice and creates a financially sustainable foundation for our work. Farm profits go back into our food justice programs and services. Moreover, the social and employment benefits of these social enterprises become outcomes in themselves. To achieve maximum benefit, it is essential that each social enterprise is run by and for the people it serves. Empowerment of disempowered people is the biggest "profit" of our social enterprises.

Our food hubs are financially viable in large part because of revenue from our social enterprise farms. However, the reality is that our food hubs are constantly facing financial challenges as we work inside the misaligned economic fundamentals. We are continually re-evaluating our business plan and questioning how well we are balancing social goals

with financial needs. It is a complex problem with many moving parts. We believe that sustainability comes from pursuing a mixture of revenue sources: farm sales income, program fees (where practical), grants from public sources, support from private foundations, corporate sponsorships, fundraisers, and a solid base of private donors. These financial tensions do not mean that a food hub's financial and social goals and objectives are contradictory. In many ways, these tensions propel our work forward.

These examples point to the multiple objectives and resulting tensions that exist within individual food hubs. Several panelists discussed the ways that economic and social forces pushed and pulled them between challenging the negative outcomes of the dominant food system and needing to compete economically with other food chain actors. This salient challenge of finding ways to develop local, grassroots alternatives to the industrial food system that address social and environmental concerns while remaining economically viable has also been raised in the literature on food hubs (see for example, Ballamingie & Walker, 2013; Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013; Cleveland et al., 2014; LeBlanc, Conner, McRae, & Darby, 2014). In this literature, some scholars have questioned the ability of food hubs to meet food-system-change goals. Perrett and Jackson (2016) argue that food hubs are important for linking local food and mainstream markets, but they "alone cannot challenge industry norms and practices, and they can even aid the food industry in maintaining the status quo" (p. 2).

The panel participants provided nuance to this discussion, highlighting the various stakeholders (such as business owners and funding agencies) that contribute to these tensions when they work under competing visions of what a food hub should be.

**Harrison:** Business owners are telling us to stop giving away free food and to stop creating these models that work around the existing market. They are asking us to get good food into the businesses and help create

economic development and activity in the neighborhood through food. We support that idea and are really trying to work that tension. The challenge is that the dominant economy has put so much downward price pressure on farmers that they can't sell for any less, and if our communities can't afford good food at that price point, we have a problem.

**Craven:** When you have someone working in a low-income community for whom the food hub is about access and social justice coming together with the chamber of commerce that is interested in the food hub as an economic development strategy, they often but heads. For example, the city of Sydney recently committed to establish a food incubator for low-income communities because they see it as a project of economic development and entrepreneurship. They're not interested in a food hub *per se*, but they are interested in using underutilized community space and commercial kitchens as a way to provide economic opportunities for underserved communities. Thus, it became a beneficial project for the City but also for the many food systems advocates that had not gained much traction in their efforts to build better infrastructure.

**Mount:** Food hubs are a complex beast and the more complex they get, the more they demand collaboration of multiple actors with competing priorities. In Ontario, we have seen food hubs with competing interests that pull in different directions even where they share broad objectives like social justice and food access. Those tensions are most often amplified by the difficulties of funding agencies that also pull food hubs in different directions.

Farbman offered a potential strategy for working through these competing objectives. He suggested a financial separation of the nonprofit (e.g., increasing access to underserved populations, training farmers in market readiness, creating new sustainable growing protocols) and business

aspects (e.g., aggregating, distributing, and marketing food—the trucks, the sales staff, the electric bill, etc.) of a food hub. He argued, “It makes a lot of sense to tease out these pieces - it makes the business look and perform better (e.g., in the eyes of a lender) but recognizes that the food system isn't going to fix itself. This separation also benefits the nonprofit funders. Their philanthropy can be fully directed to the social projects instead of buying a warehouse and trucks.”

These examples provide important insight into the tensions that exist along the continuum, but also ways that food hubs might pursue both economic and social justice objectives. The food hub practitioners expressed struggles relating to these tensions, which are also identified in the literature. The panelists also offered a variety of strategies for addressing these tensions and sustaining their work, which are taken up in the next section.

### III. Navigating Success

Participants described several strategies for navigating the competing demands described above. These practical experiences provide important insights into challenges of food hub work identified in the literature. Ballamingie and Walker (2013) describe a specific food hub's efforts toward building social and economic relations that are constrained by the logic of the neoliberal market. Similarly, the panel discussed these kinds of constraints, but also provided several practical examples of viable solutions. This is also important for moving beyond individual cases explored in the scholarly literature (e.g., Azzarello et al., 2012; Cleveland et al., 2014; Horst et al., 2011; among others) to understand commonalities in achieving success. Key strategies discussed by the panel participants included the need to be creative, flexible, and innovative; emphasizing the positive impacts provided by food hubs; building collaboration; and, aligning food hubs with alternative food networks and social movements. Many of these strategies are interwoven and were discussed through a variety of examples.

Mount pointed out that multiple examples of successful food hubs were rooted in an ability of proponents to be flexible and innovative:

The key to success is that food hubs have the ability to be persistently creative. They find workarounds to limited funding with a social enterprise approach that maximizes available program funds. They integrate work across the food chain, and they build and expand gradually, but also build relationships across different sectors by engaging with different communities.

This sentiment was also expressed by other participants who described innovative models for addressing the infrastructure, distribution, and marketing needs critical for the success of food hubs, but for which it is difficult to garner funding.

**Farbman:** There's an interesting and growing model of infrastructure-poor food hubs that are finding creative ways to succeed. Even though they move their food around on other people's trucks, they own the product, so they have buy-in. This idea of developing food ports is almost like a city-planning model where you have a hub that is at the core of a large number of congregated sets of businesses. Because you have an aggregator or distributor of food that's at the core of the model, the local food processors or sellers can take advantage of that and develop additional efficiencies.

**Harrison:** In Massachusetts, we have developed a flexible system to establish incentive programs and supplemental benefits that help close the gaps between low-income communities and farms. If you are working in a food desert where there are few retailers, you could use the technology to create incentives to increase the value of food assistance. It's really interesting to think about food security from that perspective—what is required to make local food affordable may not be a dollar-per-dollar match of benefits. It may be much less than this and could vary based on consumer need, supply, and demand. What might be called a discount or incentive for SNAP beneficiaries, the rest of the world just calls a sale. There is a lot of opportunity to use

technology to help create economic development by selling fresh and healthy food if we use government programs efficiently, creatively, and responsibly.

**Dandy:** The social enterprise of our community farms is vital to our success. Everdale and The Seed have been able to access funding through business grants because we are presenting a business model that is attractive to funders. In this way, we raise capital and operational dollars for a fresh food aggregation and distribution warehouse that serves community members experiencing food insecurity. We were also able to attract about CAN\$2 million in social investment to start Black Creek Community Farm in large part because of its social enterprise format and food justice goals.

In fostering this flexibility, the panelists also discussed circumstances where food hubs would focus less on food and more on the other features and outcomes of the work. Craven described this as becoming a “food hub by stealth,” whereby:

Local farmers who are interested in selling to a food incubator are connected, which is mainly about value-added products. For example, there are a lot of seconds that could go into jams, chutneys, and other things like that. Over time, that will become a box program and be able to fulfill some of the roles that a normal food hub would do. A lot of people across Australia are asking: How do we get a food hub without having a food hub? Nationally, we have recognized that you can't just ask local government for a food hub. They're going to say that it is far too difficult and that they don't have the money or that they can't license you.

Other panelists also discussed the importance of looking beyond food in order to create successful food hubs:

**Farbman:** If you are going to create a good food system, you need sufficient

infrastructure. You need to have aggregation, distribution, and marketing. Funders are interested in all sorts of different things, whether it's food access for under-served communities or economic development or positive environmental impacts. They understand that this kind of unsexy middle part is important. Usually, food hubs that are doing well have access to a large market, rather than have access to a large amount of supply. If the local government is saying it is able to make a long-term commitment (perhaps investing in a food system for twenty years), they might say we're going to build this food hub that's never going to be profitable, but we're going to keep it around because it raises quality of life or economic development for the farmers.

**Harrison:** What often prevents progress is a failure of policy. How do we create legislation that clears obstacles and barriers for school food service directors looking for fresh, high-quality food and small-scale farmers looking for new markets? Working on these problems on the ground and making it clear to government what is standing in the way of systems change is critical.

The participants also emphasized the importance of collaboration for accessing a variety of resources.

**Farbman:** I want to emphasize an approach that focuses on the networking of resources—a supply chain coordinator. This could be a person or an organization who facilitates good food in a particular area. This role might include being a market matchmaker or broker, a convener or relationship builder, a resource prospector (suggesting new directions and/or resource opportunities), a policy thought-leader, a technical assistance provider, or a catalyst.

Beyond collaboration with other food hubs, several participants and audience members discussed the importance of doing this work in

collaboration with broader food movement networks.

**Mount:** There are a significant number of food systems network organizations, and in the Canadian context we also see regional groups being developed to support food hubs. For example, Just Food Ottawa is a food systems organization that does many things—from the very practical, like the operation of a food hub, to food policy conversations at the municipal level. I'm a board member of Sustain Ontario which is a provincial food systems organization. Further, we are a member of Food Secure Canada, a national food movement organization. These networks enable us to share our work more broadly and have food policy conversations based on our local experiences at all different levels.

**Craven:** The Open Food Network is an international not-for-profit group that does online infrastructure for food hubs and the food movement. A key gap that networks like this fill is creating a community of practice for food hubs and building capacity to share knowledge around what works and what doesn't.

**Mount:** I think this is one of the places that academia can step in because most on-the-ground actors in food systems have our hands full. Reaching out and making connections with people who are doing similar things elsewhere is not something we have the capacity to take on. But academics can often find ways to bring people together and have these conversations.

This discussion of practical strategies for success provides insights into the current work of several food hubs, from overcoming constraints to sustaining their work. It also provides insight into certain tensions resulting from the different goals and objectives on the food hub continuum. In doing so, it adds to both the practice of food hubs and to scholarly literature that has focused on challenges faced in different case studies.

#### IV. Encountering Barriers

While food hubs have garnered much success, they also face a range of challenges. Several studies have addressed constraints related to logistics and competition with traditional food businesses (Barham et al., 2012; Diamond & Barham, 2011; Matson, Thayer, & Shaw, 2015; Stevenson, Clancy, King, Lev, Ostrom, & Smith, 2011); reliance on external funding (LeBlanc et al., 2014; Rysin & Dunning, 2016); and obstacles to building collaboration across communities with different identities and priorities (Mount et al., 2013). Similarly, panelists discussed the role of food hubs in addressing tensions but also breaking down barriers encountered in establishing and sustaining them. They highlighted key challenges to sustaining the range of food hub work at both institutional and community levels, including obstacles to competing with other food businesses, supporting existing resources, and expanding production to meet stakeholder expectations. In describing these impediments, the panelists reinforce existing studies that question the ability of food hubs to challenge mainstream logics (e.g., Cleveland, Müller, Tranovich, Mazaroli, & Hinson, 2014), but they also identify challenges that exist within the movement itself. Craven noted that the future of food hubs is uncertain because of the disproportionate power of large food retail outlets:

I think food hubs in Australia work really well. But, I am concerned because I don't think they have a very sustainable future. For example, New South Wales is going through a planning reform process, and it's going to disproportionately value larger food retail outlets in ongoing planning decisions. In this form of urban regeneration, small vendor options will be severely limited. In Australia, we have a heavily corporatized food system, and that means that it's very difficult for small-scale producers and small farmers, but also for new models that are trying to do innovative things to get a start. That is because the major players are in cahoots with the regulators. If you want to get food safety buy-in and have your retail license to sell food, it costs. Those start-up costs are a huge

put-off to a lot of people entering the space. Additionally, the regulatory space makes it hard for food hubs to get access to any of the market share. We have a lot of sexy, well-designed feasibility studies about food hubs but very few actual food hubs.

**Farbman:** There's not so much hub-to-hub competition. It's really competing with the establishment that presents the biggest challenge. What happens when consumers are less willing to pay the extra that it takes to deal with the inefficiencies that smaller scale operations have? At this point, there's a limited audience but maybe if there are government regulations that take into account the externalities of conventional meat, produce, and commodities, that would help. Then you wouldn't even need to work with the consumer because that potato chip is not going to be the cheapest thing on the shelf anymore.

Moreover, food hubs tend to rely on a significant amount of volunteer work. What happens when it's less hip? Even people who are paid workers need to have competitive rates for pay. There is a growth of the field but also as hubs are two, five, and ten years old, the buyers are going to be less willing to put up with what appears to be amateur service and mistakes. The mainstream establishment is very good, very efficient, quality is spot on, and when you have some of the farms that hubs work with that are new to the wholesale markets, quality can suffer. The zucchini is a little too long or a little too short, these sorts of things. That tolerance is going to get lower.

Another barrier discussed by panelists was the flow of resources from stakeholders into innovations instead of supporting existing successful projects. While roundtable speakers recognized the need to be constantly creative (as discussed in section III), they also seek more support for initiatives that are succeeding.

**Harrison:** We've got these incredible food hubs in neighborhoods. How are we

supporting them? That's one practical thing that I see government missing over and over again—not supporting existing businesses and people that are doing well.

**Mount:** Many food hubs are overly dependent on funders. They are put in a difficult position of always having to chase the shiny new thing. They get pressure to do something completely different instead of working with people who are already trying to solve the problems and adequately address the issues.

**Craven:** In Australia, there has been almost no philanthropic funding for things that have been established more than five years. It is also about constantly chasing that shiny new thing. It always has to be innovative if you're going to get some kind of philanthropic buy-in.

The panelists also discussed challenges to scaling up in order to meet the economic expectations of various stakeholders.

**Mount:** Removing barriers for producers could substantially increase production. Our research found that there is a huge appetite for growth amongst farmers for access to regional food hubs if they can be developed in a way that can service the farmers' needs. The top impediments to expansion across all food hub respondents are connecting to buyers. Further, they struggle with financing expansion, increased production, and trying to work with large buyers. On this latter point, the expectations of certification from large buyers, delivery demands, minimum order requirements, and product consistency put up major barriers. Typically, food hubs are playing the role of not-for-profits that are being ignored by the market.

The comments from the panelists reinforced many of the sentiments from existing food hub literature in discussing barriers to competing with mainstream agricultural producers. They also add new insights to highlight challenges within the

sector that are driven by stakeholder expectations of constant innovation and economic expansion.

## Conclusion

This paper has brought together the voices of both scholars and practitioners in order to share the results of sustained food hub research with the practical experiences of food hub operations and advocacy. The aim was to enrich our understandings of food hub initiatives along with the further development of the field. In particular, we have discussed key insights that relate to different descriptions of food hubs, differing objectives, navigating success, and encountering barriers. To frame this discussion, we identified a continuum that describes different pathways to effect change (from enhancing food supply chains to challenging the negative outcomes of the dominant food system through a social and ecological justice approach). This discussion highlights the tensions that emerge between and within food hubs and the mainstream food system. Indeed, these tensions are often productive, helping food hubs to see new ways of *being* food hubs. In conclusion, we discuss three key opportunities for moving forward in support of food hub innovations and challenges identified by the panelists.

One of the key lessons from the roundtable discussion with implications for the future of food hubs is the role of technology. The use of open-source technology (e.g., Open Food Network) points to a common issue that food hubs struggled with: complex logistics and accounting systems that can accommodate the diverse needs and capacities of suppliers and consumers. Some literature (Berti & Mulligan, 2016; Barham et al., 2012) has pointed to the importance of technology for the development of robust food hubs, yet many have struggled to adapt these systems to their own needs. As such, a commons-based peer production platform for hub technology has the potential to provide adaptable solutions that build on previous experiences shared by others, without having to repeat the same mistakes.

Another key lesson relates to the need to fund the social and community-based services provided by food hubs. The idea of a supply chain coordinator captures the many functions performed by

those who facilitate food hub work—particularly those functions that go beyond the tasks required for day-to-day operation. These functions, including matchmaker, educator, relationship-builder, policy thought-leader, and catalyst, are not easily reflected on a balance sheet. Investment in these functions will produce long-term economic and community development benefits. Academics and practitioners working together must find a way to clearly communicate the value of investment in the many functions performed by supply chain coordinators. This also illustrates the importance of understanding the differing goals of food hubs, their fluidity along the continuum, and the need for further research and greater collaboration among researchers and practitioners so as to support investment in the various economic and social justice goals of the field.

Finally, scholars can make valuable contributions to this work by facilitating connections and research. Matson and Thayer (2013) suggested that as recently as five years ago there was little research on food hubs. While that research has grown dramatically alongside the expansion of the field, many important areas for future research were identified during the panel discussion. These included the need to better understand primary drivers for food hubs, food hub viability and scale, food safety, food hub responses to market signals, and the effects on community revitalization. The success of the Food Project's Bounty Bucks program demonstrates the critical role governments can play in dealing with the seemingly intractable problem of providing healthy food to low-income

populations within a larger industrial food system. This is an example of a role for academics to play in gathering the necessary evidence to make a case for government support by presenting healthy diets as an investment in healthcare, educational outcomes, and community well-being. Academics and practitioners alike can work together to convey the interconnected nature of these problems and solutions to policy-makers. Another critical area of further research is around food systems as economic development. These include quantitative studies (e.g., exploring job creation, economic multipliers of a local food system, increases in farm viability) and qualitative measures related both to the attractiveness of the area for non-geographically bound operations (e.g., technology) and to the impacts of a thriving local food system on quality of life.

The discussions presented in this paper have touched on a range of topics and demonstrate the importance of hosting these kinds of collaborative conversations between academic researchers and practitioners in order to share experiences and critically reflect on scholarly literature. 

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