

From Seed to Food Security

Integrating Student Agriculture with Basic Needs Security

From
UC Berkeley Farms & Gardens
UC Berkeley Basic Needs Committee

Acknowledgments

The Author

Meg Prier is the Basic Needs Food Manager at UC Berkeley, a staff position with the Berkeley Food Institute. In this position, Meg works closely with the campus gardens and the UC Basic Needs Committee, providing support and coordination to the gardens for their operations, integrating the farms and gardens into Basic Needs, and supporting all food and produce sourcing for Basic Needs at UC Berkeley.

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Land Acknowledgment

We humbly acknowledge that we are doing the land-based work of campus agriculture and food security on stolen Indigenous land; that indigenous peoples have stewarded and lived and thrived on these lands for thousands of years before colonization; that indigenous communities continue to live to this day and struggle to regain the rights to their land. We hold this history and present of ongoing colonization central to our work; we aim to build relationships with indigenous communities: for UC Berkeley the Chochenyo Ohlone people; for UC Davis the Patwin People; for UC Santa Cruz the Amah Mutsun. We aim to build relationships with indigenous student organizations and to cultivate opportunities for indigenous students to engage with the local indigenous community and with the land. And we understand, particularly when indigenous students experience food insecurity at unequally high rates, that power and oppression are fundamentally tied to food insecurity and that solutions must include a redistribution of power and autonomy. (We invite you to include land acknowledgements in your written reports, presentations and events to honor and recognize the indigenous land that you are on. Identify that land [here](#).)

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Introduction

Basic Needs Security

Basic needs security is defined as having adequate food, housing, finances, and wellness. Food security includes sufficient quality and quantity, including both adequate calorie consumption and nutrition.¹ Basic Needs insecurity is a national and global challenge, and one that is experienced at particularly high rates by college and university students. Approximately 1 in 7 families in the United States experience food insecurity,² compared to national studies that have found rates of food insecurity in college students from 20 to 66 percent.^{3,4} A 2017 study of the University of California system found that on average 44 percent of undergraduate students and 26 percent of graduate students experience food insecurity at some point in their college experience; and five percent of undergraduate and graduate students experience homelessness.⁵ Basic Needs insecurity unequally impacts particular communities of students. When analyzing for up to three of the following intersecting identities—underrepresented minorities, older students, LGBTQ, independent, low socioeconomic status and first generation students, former foster care youth, and transfer students—a 2017 Global Food Initiative multi-dimensional study of food and housing insecurity found rates of food insecurity as high as 74 percent and housing insecurity as high as 15 percent for undergraduate students and 57 percent and 10 percent respectively for graduate students.⁵

There are several contextual reasons for student basic needs insecurity in institutions of higher education across the country including insufficient state² and federal⁶ investment in higher education and financial aid in particular, and rising cost of living. Over the past four decades the cost of living for college students has increased over 80 percent.⁷ Also, high school curricula do not include holistic skill-building for college life in terms of budgeting and college financing, navigating institutional bureaucracy and resources, grocery shopping, food preparation and cooking, and wellness and nutrition. Food insecurity is further exacerbated by busy student schedules especially for students balancing school and multiple jobs, limited access to kitchen infrastructure, and the limited availability and accessibility of affordable prepared food on and around campuses.⁵

Basic Needs insecurity impacts not only the quality of a student's college experience, but their wellness and academic performance. Undergraduate students experiencing food insecurity received GPAs that are statistically significantly lower than the average student GPA. And graduate students facing food and/or housing insecurity are 5 to 12 percent less likely to be on track to finish their degree program.⁵

In response to the growing awareness and experience of Basic Needs insecurity at UC campuses, student led efforts arose starting in 2014. These initial efforts focused on creating support services for students in crisis. With the increasing support, participation and funding, Basic Needs efforts have since expanded to a full basic needs model across the UC System that is both preventive and holistic. This model aims to both support students experiencing basic needs insecurity now and to advocate for campus, state and federal policies, programs and investments to prevent and mitigate insecurity. The model starts with pre-college education in high schools and includes data and research, advocacy, and institutionalization in addition to direct services and programs. Food security services on UC campuses include:

- **Food pantries**, offering free pantry items for students in crisis
- **CalFresh enrollment**, federally funded electronic benefit transfer (EBT) cards that offer up to 192 dollars per month for groceries
- **Food Assistance Program** for students who don't qualify for CalFresh
- **Food recovery programs** that increase free produce in pantries and safe distribution of free or low cost prepared meals
- **Campus infrastructure** for food preparation and storage
- **Skills programs** on cooking, nutrition and food purchasing

Food Systems Context

We approach the challenges of food insecurity and the role of campus agriculture from a full food systems perspective that embraces the complexity of food, food production and equitable food access and distribution. We employ a race and equity lens to acknowledge and understand the impacts of a history and legacy of slavery and structural racism in American agriculture and institutions of higher education. We recognize that we interact with food systems that are global in nature, have and are built by working class communities of color that are often food insecure themselves, and are socially and environmentally unsustainable. California plays a particular role in the nation's food system as a leading producer of produce: California's Central Valley produces two-thirds of the nation's fresh fruits, vegetables and nuts with an annual agricultural output of 50 billion dollars.⁸ And our institutions of higher education, particularly land grant institutions, hold a particular position in the history and potential future of our state's and national food systems.

Student food insecurity can be viewed in the broader context of food systems inequities. Our current food systems impact human and natural society in negative ways throughout the chain from production to consumer. Wages for food systems jobs are one of the lowest across US industries, workers typically receive minimal benefits and often work in unsafe and hazardous conditions and are experience illegal labor practices. Ironically, food system workers on farms, in processing plants, transportation, retail and food service, experience higher levels of food insecurity than the average American. On the consumer side, unequal access to affordable healthy, nutritious foods increases the rate of diet-related chronic illnesses of diabetes, hypertension and heart disease and disproportionately affect low-income communities and communities of color.⁹

Additionally, conventional agriculture and food systems have numerous negative impacts on the environment that endanger environmental and public health, reduce ecosystem resilience and exacerbate future impacts of climate change. This includes use of synthetic chemical pesticides and fertilizers on farms that contaminate groundwater and drinking water supplies, greenhouse gas emissions from machinery, fertilizer use, processing factories and transportation, etc.¹⁰ And food waste is rampant in the United States, with over 10 million tons wasted on farms and an additional 52 million tons wasted annually at various further points in the food system; approximately 40 percent of all food grown in this country goes to waste.¹¹

We recognize the need for alternative paradigms, techniques and systems that are interdisciplinary in practice and focus on health, equity and access from production to consumer. We aim to be aware and intentional of our collective role as an academic institution and our collective capacity to leverage the resources, knowledge and creativity of our campuses to appropriately and effectively respond to the growing needs and challenges facing our student communities and our wider communities. We also recognize that our campuses have increasingly diverse populations of students from communities with different relationships to food, land and growing food. And that urban agriculture and student-led agriculture spaces tend to be over represented by white and wealth or class privileged students.

About this Toolkit

This toolkit is intended for college and university students, staff, professors and administrators inside and outside the UC system. Our aim is to share the framework, process and sample outcomes of integrating student agriculture with food security efforts. The goal is not for others to simply repeat what we have done, but rather to understand the motivations and process behind our developing these programs as inspiration for what others could do and adapt to their campuses. We share experiences from three University of California campuses to capture this diversity: from a large, rural land grant institution (UC Davis) to an urban university with more recent and smaller urban agriculture projects (UC Berkeley) and a non-land grant university (UC Santa Cruz).

The primary goals of the programs in this toolkit include:

- **Increase supply** of fresh produce to campus food security services
- **Increase accessibility and consumption** of free and affordable healthy food and fresh produce
- **Develop educational opportunities** to explore intersections of identity, power and privilege as they relate to agriculture, food systems and food security
- **Build leadership** and skills development for students to become effective food systems leaders
- **Change policies and structures** that perpetuate student and community food insecurity

The first section of the toolkit provides a brief summary of the different programs at our three institutions, with web links for more information. The remainder of the toolkit focuses on themes and process across the three campuses in order to share a collective idea of what is possible. We hope to inspire our fellow college communities with the variety and diversity of opportunities to explore new food systems approaches to food insecurity and to integrate experiential learning with addressing basic needs challenges. We aim to: a) offer tools and resources for deciding and adopting place-specific, context-adapted and community-led full food systems responses to food insecurity that can both address challenges faced by students today; b) empower students with the knowledge, language, skills and experiences to become leaders and changemakers in our wider food systems after graduation; c) engage full campus communities of students, staff, faculty and administrators to engage in advocacy, research and experimentation that can work to shift the structural inequities and systems that continue to create and perpetuate basic needs insecurity.

The following sections overview the approach that our campuses have taken to understand our specific campus food system and to develop adapted responses to them; some of the programs that our different campuses have adopted; and some of the barriers and challenges that we have faced in initiating and sustaining these programs.

Program Overviews

UC Berkeley

UC Berkeley is an urban campus in the Bay Area, with several small agriculturally productive spaces. These include the 1.25 acre [UC Gill Tract Community Farm](#) that is a University-Community collaboration, produces food for the campus pantry and numerous community food security organizations, and offers workshops and training opportunities. Founded in 1868 as the first land grant institution in the Western US, UC Berkeley maintains two agricultural research plots, one of which is currently hosting an [urban agriculture research project](#), and offers undergraduate and student-led courses and graduate research in urban agroecology and farming. There are also several small, student-led and engaged [food-producing gardens](#) on and around campus, a newly created gleaning program to recover produce from urban fruit trees, and produce recovery from local grocery stores, farmers' markets and produce distributors ([see overview of food recovery here](#)). UC Berkeley's Basic Needs Committee runs a [campus food pantry](#), pop-up pantries, [CalFresh enrollment program](#) and [Food Assistance Program](#). The Berkeley Food Institute completed a [Foodscape Map](#) to analyze campus food systems with a focus on equity and barriers to inclusion and propose policy recommendations. The Student Organic Gardening Association (SOGA) also recently completed a survey on barriers to equity and inclusion that is informing revisions to their programming.

Contact: Meg Prier, Campus Gardens Coordinator and Basic Needs Food Manager: megprier@berkeley.edu

[UC Berkeley Basic Needs Website](#), [Campus Gardens Website](#)

UC Davis

UC Davis is also a land grant institution that has hosted a more than 20 acre [Student Farm](#) since the 1970s. The Student Farm integrates with food security through the [Community Table Project](#) (CTP), initiated by student efforts in 2014. CTP is twofold: Fresh Focus efforts to distribute Farm produced fruit and vegetables to food insecure students and Community Connections to increase awareness and engagement and start conversations about the intersections of people, place and food. Through Fresh Focus, the Student Farm donates food to the Associated Students of UCD Pantry, the food stand Fruit and Veggie Up Program and several other locations. This program has been facilitated by increased infrastructure and dedicated growing space at the Farm and has provided internship and paid student positions. Community Connections works to increase the diversity of students involved in UCD's campus food system through the following and work to increase inclusivity and cultural relevance of the Student Farm through the following: Farm trainings on multicultural leadership, identity and power in food and agriculture, sponsoring student attendance at local conference and talks, academic engagement through course field trips, workshops and activities hosted at the Farm and co-hosting events with departments and student organizations.

Contact: Carol Hillhouse, Student Farm Associate Director or Katharina Ullmann, Student Farm Director: jchillhouse@ucdavis.edu, kullmann@ucdavis.edu

[UC Davis Aggie Food Connection](#), [Student Farm Website](#)

UC Santa Cruz

UC Santa Cruz is home to the [Center for Agroecology and Sustainable Food Systems](#), a program that aims to research, develop and advance sustainable food and agricultural systems that are environmentally sound, economically viable, socially responsible, non-exploitative, and that serve as a foundation for future generations. It oversees the 30 acre UCSC Farm, which has been around for more than 50 years and hosts an apprentice program, research projects, and student programs and courses. The Farm donates produce regularly to food security efforts via the UCSC weekly Produce Pop-Up that offers affordable produce to students and accepts EBT cards from students who are receiving CalFresh benefits. The farm also donates to the UCSC Farm Stand twice a week and the Slug Support Pantry. The Farm recently implemented hoop houses and a food trailer dedicated to food security production to increase flexibility and year round availability of produce. The [UCSC Basic Needs Efforts](#) also hosts cooking demos from food grown on the Farm with a mobile food and cooking trailer.

Contact: Damian Parr, Research and Education Coordinator and Tim Galarneau, Community-Engaged Education Coordinator: dmparr@ucsc.edu , tgalerne@ucsc.edu

[UCSC Basic Needs Website](#), [Center for Agroecology and Sustainable Food Systems](#)

Systems Approach to Food Insecurity

We started by understanding our campus-specific food systems with which our students interact and how they support or fail to support students with limited financial resources. Understanding food insecurity from a full systems perspective enables a more holistic understanding of need, the building of cross-campus strategic partnerships and the investment of limited resources to increase sustainable impact.

Through this analysis we asked some of the following questions:

- **What food options** are currently available to students (campus cafes, stores and dining halls; nearby restaurants, cafes, grocery stores, farmers' markets)?
 - How accessible are they (transportation, distance, hours)?
 - Do they take EBT cards?
 - What food options do they offer and what is the nutritional value of these foods?
 - Do they offer affordable produce, culturally appropriate, diet and allergen-friendly foods?
- **Why** do our students experience food insecurity?
- **What is exacerbating** insecurity? (time, cooking skills and knowledge, nutrition knowledge, access to kitchen space, publically accessible refrigerators and microwaves on campus)?
- **Who impacts** food-related decisions on campus?
- **How to increase accessibility** of affordable produce that could be brought closer to campus?
- **What can campus or nearby agriculture contribute?**
 - How urban or rural is our campus?
 - What is the capacity of campus farms and gardens? Can they be expanded or augmented?
 - Is there a network of community organizations growing food?
 - Are there local farms that can be a resource?
- **Is food wasted** in the system? Is this waste edible and can it be recovered?
- **Community networks** for food security services: Do they exist? Are or how are they accessed by students?

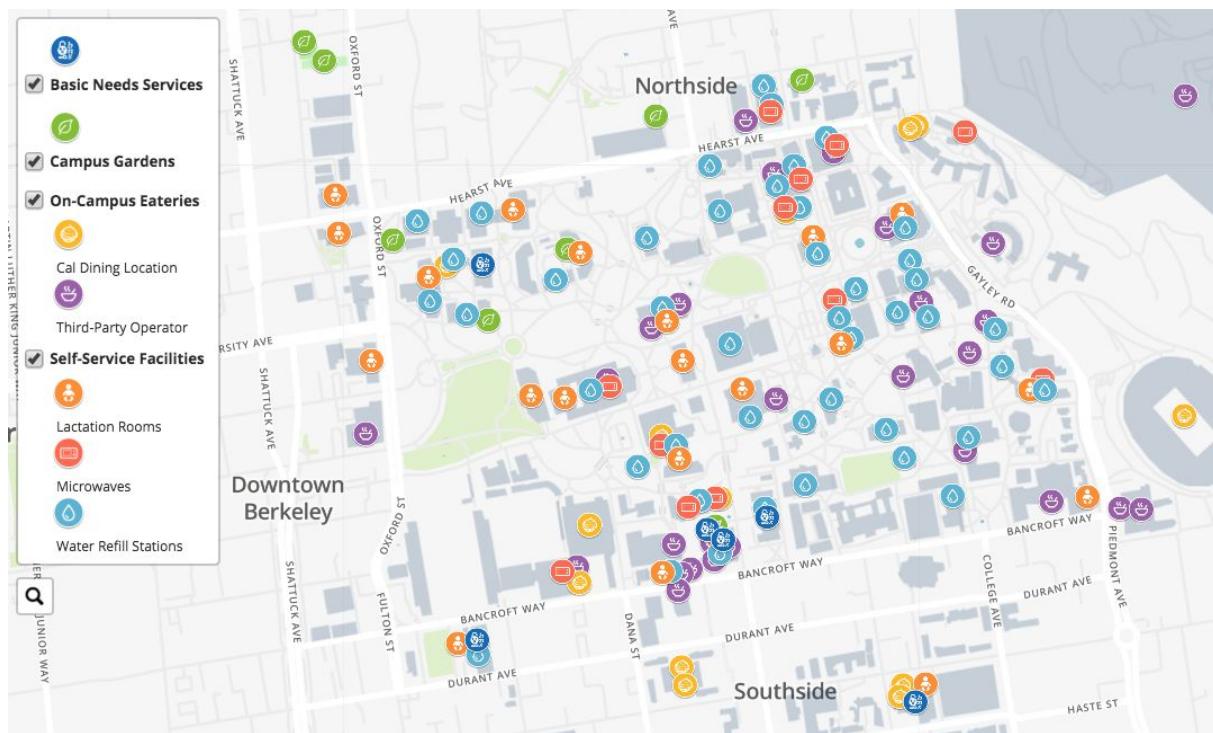
These questions inform strategic decisions of how to integrate on and off campus, given campus specific needs, goals and resources. Some of these decisions could include:

- **Political pressure and advocacy** on campus (ie. securing land for more growing space, kitchen space for a student-led affordable cafe, installing EBT readers in campus food outlets)
- **Relationships and collaborations** to initiate on and off campus that can address needs
- **Gaps** that could be easily filled to increase impact and access
- **Strategic investment** with limited resources

Some of the primary themes and goals as we navigate these decisions and program developments include:

- **Moving from a charity model to prevention and self-determination:** We recognize that food pantries are not and never will be the solution to systemic food and basic needs insecurity and that students are not experiencing food insecurity because of anything they individually have failed to do. And at the same time, we are committed to supporting students who are currently experiencing crisis, while working to change the structural systems that perpetuate student basic needs insecurity. For this reason, we focus on a preventative model that increases enrollment in CalFresh (and the Food Assistance Program for students who don't qualify for CalFresh) and increases access to affordable fresh produce and healthy food to prevent students from reaching crisis today, while we advocate for increased investment in student basic needs and financial aid.
- **Building relationships across campus:** Basic Needs Security is complex and reaching and supporting the thousands of students in need is a large challenge that requires the expertise, commitment and participation of students, staff, faculty and administrators across disciplines. Our universities are also institutions with a wealth of knowledge and community and we recognize that we can most effectively respond to food insecurity and develop ethical, values-based food systems by learning, building relationships and collaborating across departments and disciplines.

- **Student engagement, education and leadership:** We uplift student leadership, recognizing that students are the experts on their own experience and therefore have the knowledge and leadership to most effectively design solutions and alternatives. Additionally, systems to address food insecurity offer a myriad of opportunities for student engagement and experiential education in leadership, management, volunteer recruitment and retention, operations, data collection and food systems specific skills (farming, cooking, packaging, food safety, transportation and distribution, etc.). We intend by doing so to empower our students with the skills, knowledge, perspectives and experiences to transform food security in their student community and effectively participate in food systems and food security efforts after graduation.
- **Shifting narratives, power and structures:** Food and basic needs insecurity



[UC Berkeley's Foodscape Map](#) Project includes a web-based, interactive map that geographically shows the most important food-related facilities on campus. See the website for more information. In addition to providing information on campus resources, the Foodscape Map shares narratives on student experiences, and is used as a research training tool for student empowerment on food systems-thinking.

Sample Programs

The following section outlines an overview of the different programs that our three campuses have developed to integrate student-led and student engaged agriculture programs into food security efforts. This is by no means an exclusive list of options, but rather intends to represent that diversity of opportunities. This also expresses a range of programs developed at schools with different contexts and resources from UC Davis and UC Santa Cruz which are both more rural campuses with student farms that are decades old, compared to UC Berkeley's urban context with much smaller and more recently developed urban agriculture.

The following is divided into sections based on how they interact with food security from crisis support to cultural and systems change/

Campus Agriculture and Crisis Support

Fresh Produce Distribution for Food Insecure Students

The primary way that student agriculture support food security efforts is via student grown, harvested, processed and transported fruit and vegetables that are brought to food distribution outlets. These include:

- **Student food pantries**
 - [UCB Food Pantry \(facebook\)](#)
 - [UCD Food Pantry](#)
 - [UCSC Food Pantries](#)
- **Pop-up food pantries** or produce distribution stands
 - [UCSC Produce Pop-Up](#)
 - [UCD Fruit and Veggie Up](#)
- **Farmers' markets** that offer the California market match program that double EBT dollars
 - [City of Berkeley farmers markets](#)
 - [UCSC Campus Farm Stand](#)
 - [UCD Farm Stand and Farmers Market](#)
- **Community Supported Agriculture (CSA) programs**
 - [Phat Beets CSA](#) (accepts market match program)
 - [UCD Student Farm CSA](#) (reduced price for students)
 - [UCSC FArm CSA](#)
- **Student-run grocery store** and (in planning) **food recovery campus kitchen** with sliding scale meals
 - [Berkeley Student Food Collective](#)
 - [UCB Student Kitchen](#)
 - [UCSC Cowell Coffee Shop: For the People](#)

These efforts increase the quantity of fresh food offered for free at service locations specifically tailored to food insecure students. Some of them, including the market match program, CSA and student-run grocery store and kitchen, increase the accessibility of affordable fresh produce. The California [Market Match Program](#) partners with farmers' markets throughout the state to double EBT dollars for farmers' produce. This therefore both increases sales for local farmers and increases the affordability of fresh produce for food insecure people. The campus-run kitchen and sliding-scale meal operations intend to offer experiential learning opportunities, student leadership and management experience, and to increase affordable prepared food options on campus.

Given UCD's and UCSC's larger farms, they have significantly more capacity for donating larger quantities of produce than UCB. In 2017, UC Davis' Student Farm donated over 10,000 pounds of fresh produce to food security efforts; in contrast, UC Berkeley's farm and gardens with less than 5 acres of land donated approximately 3,500 pounds. All of these spaces have invested in infrastructure to increase production and storage specifically for Basic Needs activities including increased field space, hoop houses and cold storage and increased student staff to support with the production and distribution labor of increased production.

Accessibility and Consumption of Produce

Transportation and distribution from farm to these outlets is facilitated through farm or Basic Needs program vehicles, University staff and student staff employed through either program. Once at the pantry or distribution outlet, Basic Needs implement several programs to facilitate students using the produce, especially for vegetables that students are less familiar with. These include:

- **Cooking and nutrition workshops** and demonstrations located outside the pantry
 - [UCB Tang Center food demos](#)
 - UCSC Food, Nutrition and Basic Skills Program ([facebook](#))
 - [UCD Student Health and Counseling Services free cooking classes](#)
- **A hands-on food security and wellness course** designed specifically for food insecure students
 - [UCB NST 20](#)
 - Food for Thought (hands-on student initiated cooking and eating for food insecure students)
- **Packaging and labeling produce** in the pantry: ie. salad packs with various greens
- **Recipe cards and videos**
 - On the UCB Food Pantry facebook ([example](#), [example](#) and [others](#))
 - EatFresh.org
 - UCB Eating on a Budget [online resources](#)
 - UCD Student Health and Counseling Services [online recipes](#)
- **Sliding scale meals** made by a student-run grocery store with pantry produce about to go to waste

Communication and Logistics

Additional communication channels are important to coordinate logistics between the farmers and Basic Needs entities, inform pantry users about available produce, and to shift as much as possible from a charity model to a self-determination model. These include:

- **Produce survey** with food pantry users on what produce they would like to access that informs crop planning and harvest
- **Crop planning** for Basic Needs with culturally appropriate produce and produce that requires minimal preparation and cooking
- **Real-time online information** about available produce in the pantry and additional resources for accessing affordable produce
- **Close coordination** between agriculture and Basic Needs communities, including staff and student participation in both spaces

Alternate Agricultural Sources of Fresh Produce

Campuses are also exploring alternative supplies of produce, particularly for UC Berkeley given their smaller urban agriculture initiatives. These include student-led and designed efforts to:

- **Gleaning** from fruit trees in public areas and/or local residences
- **Second harvests** from local commercial or community farms
- **Produce warehouse waste** recovered from distributors
- **Farmers' market and grocery store produce** waste recovery

Integrating with Community Food Security Efforts

Agricultural efforts on campuses support and integrate with city and regional efforts to reduce food insecurity in the wider community. These efforts include:

- **Campus farm donations** to community organizations that support families and individuals facing food insecurity.
 - [UC Gill Tract Community Farm harvest distribution](#)
- **Participation in city-wide networks** of food security service providers
 - [Berkeley Food Network](#)
- **Full-community farm programming:** workshops, events, farm stands, seed and start sales, etc.
 - [UC Gill Tract Community Farm Events](#)
 - [2018 Events and Workshops](#) at the UCSC Farm
 - [Programs](#) at the UCD Student Farm
- **Internship programs** where University students support garden and nutrition programs in local school districts that enable experiential learning, nutrition and food security education in k-12
 - School District Internship Program (see toolkit: "Engaging University Students in Local School Gardens")

- **Working with local school districts** to pair high school students with University students for gleaning and harvesting efforts
 - [Food recovery website](#)
- **Connection with research projects** on food security and accessibility facilitated by academic research
 - [Foodscape Map](#)
 - [UC Berkeley Urban Agriculture Research](#)

Cultural and Systems Change Work

We seek to expand the opportunities for students to explore their identity and food systems from a race and equity lens to understand their relationship with food and land. We aim to support students with the tools and opportunities to become leaders in changing the narrative and ultimately the structure of our food systems on and off our campus. Both campus agricultural spaces and food security spaces are experiential classrooms and we have initiated efforts to improve inclusion and diversity of these spaces and opportunities for a wider population of students to participate, learn and take leadership in these spaces. This includes efforts to make agricultural spaces more inclusive and culturally relevant to a wider base and range of student communities. Research does also suggest that increasing awareness of how food is grown increases consumption. These efforts find ways to involve students through work, programs and courses that they are already engaged with to increase accessibility to students with limited time. We also aim to compensate students more deeply involved through course credit (internships) or with payment.

These efforts include building cross-campus relationships between campus farms and gardens, the Basic Needs Committee and departments, professors and student organizations that focus on food, culture, public health and social justice to offer a variety of learning and engagement opportunities. Departments that campuses have partnered with include Chicanx Studies, Ethnic Studies and Sociology around courses on decolonization, women's participation in social movements, socio-spatial analysis, etc.

- **Course field trips** to the farms and gardens
- **Course lectures** on campus-specific context of basic needs security and food systems
- **Student farm and garden trainings** that are integrated into student-led courses at the gardens, trainings for incoming students and/or public trainings that include the following: allyship, identity, inclusion, power and privilege and institutional discrimination
- **Paid student internships** for students to lead social media campaigns, write presentations and papers and attend conferences related to culture, equity and inclusion, and their integration into farming and food systems
- **Foodscape Mapping Project** for students to learn vital research tools to explore campus barriers in food-related education and services for marginalized community members, and highlight opportunities to overcome these obstacles.

Increasing Accessibility of Growing Food

We do not advocate that students experiencing food insecurity should be responsible for growing their own food. However, learning how to produce their own fresh food can be a process of self-determination for those who are interested and able. Moreover, growing food can also offer an additional source of produce that directly meets students' needs. It can also offer a healing connection with land and food. Our farming and gardening spaces work to increase accessibility with a diversity of opportunities to participate including those that require minimal time commitments, are integrated into course requirements, or offer credit or financial compensation. In addition, in order to facilitate small-scale, balcony and/or backyard growing, we have developed the following programs and resources at some or several of our campuses:

- **Basic Gardening Workshop:** a three-hour hands-on workshop integrated with a personal food security and wellness course that is open to the public. The workshop aims to build confidence, provide very practical how-to steps and a realistic sense of resources required and potential output.
- **Community and student workshops** at student farms on basic gardening and farming skills.
- **Community farms as community resources:** community farms and gardens that are open to the public as resources for problem-solving, starts, seeds, etc. for people growing at home
- **Practical Resource Guide** with information of free or low-cost material suppliers, workshops and knowledge resources at the campus and in the local community
- **Community Gardens** in graduate housing that enable students to rent a small plot and grow their own food. The wider community supports with resources and knowledge. UC Berkeley's community garden also has a shared plot for new gardeners.

Resources, Challenges, Barriers

In this section, we intend to be transparent about the challenges and barriers that our campuses have faced in developing these programs and cross-campus relationships and the necessary resources required to overcome these barriers and/or to implement the programs. The aim is to provide insights that can facilitate adoption of effective programs that link farms and gardens to Basic Needs on other campuses and to enable strategic and sustainable programmatic decisions given access to resources and funding. The following are challenges and/or resources that we needed in order to enable or facilitate these programs, with discussions of their impact and how we have navigated these issues.

- **Campus Environmental Health and Safety (EH&S) Requirements:** Our campuses have inconsistent health and safety requirements that slows and sometimes hinders the development of programs. We build relationships with our EH&S personnel and work in close collaboration with them to avoid barriers.
- **Securing space and land:** The campus farms and gardens have limited land security, particularly on UC Berkeley's campus where land is highly desired and contested, given increased need for new student housing. As a full Basic Needs model, we recognize the need for urban agriculture and affordable student housing and strongly believe that there can be creative solutions to meet both these needs. Insecure land tenure makes long-term planning and investment challenging and continues to put growing spaces at risk.
- **Infrastructure:** Our campuses needed to invest in additional infrastructure at our farms and pantries to enable harvest for our food security programs. At the farms these investments have included: installing hoop houses to enable year-round production for Basic Needs, increased cold storage and washing and processing stations, allocating specific plots or rows for Basic Needs production. In our pantries infrastructure improvements have included purchasing additional refrigerators and storage shelving.
- **Labor:** Additional student and staff labor is needed to make these programs work, specifically for the coordination and transportation of produce from farms and gardens to pantries, staffing of pop-up pantries or farm stands, production of additional Basic Needs-specific agriculture, coordination of course field trips and lectures, etc. We strongly believe in compensating students for their time and efforts and paying for travel and other costs related to them leading workshops, attending conferences, etc. With our hiring students, campuses were able to significantly increase the quantity and diversity of harvest produced and regularly delivered to food security resources and student engagement and leadership.
- **Student transition and program continuity:** Student turnover and transition is a reality of college campuses and requires strong systems and staff coordination and oversight to facilitate smooth transitions and keep programs operating. This is especially true for programs that are interdisciplinary and additional to the primary foci of individual departments. Having staff oversight and coordination, while both essential for program transition and long-term sustainability, also does come with costs.
- **Data Management and Evaluation:** Data and evaluation is essential for holding ourselves accountable and evaluating the honest impact of our programs. It also enables us to continually evolve, improve and adapt to changing and growing students needs. This data is compared against the scale of the need and long-term goals and visions.
 - Data for crisis support: type and weight of produce (meals, CSA baskets) harvested and distributed, food waste poundage, feedback from users on quality, and type quantity of produce.
 - Data for education and engagement activities: number of students engaged and feedback evaluations from their experience.
- **Cross-campus collaboration and partnerships:** One of the benefits of working on campuses is the significant extent of knowledge and resources across disciplines and departments. Collaborations across departments on any given campus, and also across campuses, offers great potential for learning and developing effective strategies and programs. However, for many campus that conventionally work within their departments and hierarchies, cross-campus collaborations can be challenging and require ongoing engagement. Finding regular spaces and resources for these dialogues, interactions and collaborations is important to sustain and prioritize.

Lessons Learned

All of our programs are an imperfect work in progress and we aim to be continually open to and guided by critical reflection and evaluation. And we aim to be continually evolving and improving as we build our programs, respond to changing needs and growing understanding. The following are some of the lessons we have learned along our journeys to date:

- Persist through bureaucracy and politics (find a way to make the impossible possible)
- Relationships and coalition building are essential
- Understanding and working from/with power and equity
- Thinking strategically
- Innovate with an understanding of the past and present and inspiration from across the country
- And creativity beyond what currently exists (adaptation, evolution and creation over replication and competition)
- Systems thinking
- Investing in our students
- Process as much as product
- Importance of self-reflection and honest evaluation and feedback
- Embracing evolution and change
- Connecting with community outside of the University
- Embracing the chaos and repetition of large, decentralized campuses with high turnover
- Leverage limited resources without constraining ourselves to existing resources

Concluding Words

This toolkit offers our experiences and programs as inspirations and examples of what could be possible. Whether your campus is in the early phases of agricultural programs and food security efforts, we hope that what is shared here can help the initiation of new programs or the evolution of existing programs to better integrate and meet the visions and needs of your campus population. We recognize that your programs will need to be tailored to the context, physical and social, of your campus and innovative, creative programs will come from your collaborative tailoring and designing. And we encourage you to stay in contact with other campuses, those with established programs and those just starting. And to do so, not so that you can copy what we, or other campuses, are doing, but to exchange lessons, tools, insights and inspirations to improve the strategic, effectiveness and accountability of each of our unique efforts. We wish you well on the journey ahead and look forward to learning and sharing with you in the future.

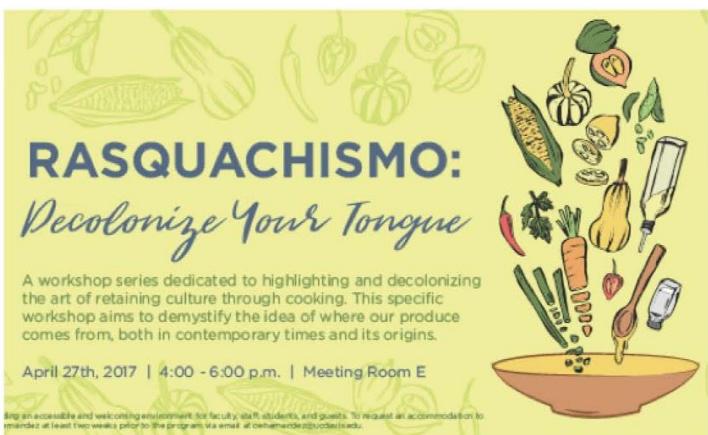
Our Programs through Images



UC Berkeley: UC Gill Tract Community Farm and undergraduate harvest at the Oxford Tract Research Plot



UC Davis: Student Farm students and interns planting and harvesting produce from the Farm for Basic Needs.



Cultural and Systems Shift (L to R): Collaborative Decolonization Workshop at UCD, UCD CTP participation in panels and talks



Transport from Farm to Food Security (L to R): Bike trailers (UCB), Farm tractor (UCD) and Basic Needs electric vehicle (UCB)



Food Distribution to Food Insecure Students (L to R): Outside pantry (UCD), Pop-Up Pantry (UCB) and Farmers' Market (UCSC)



Increasing Skills & Accessibility at UCB (L to R): Kale pesto food demo, salad packs at the pantry, sliding scale meals w. pantry waste

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