It was in June, 2016, at a regularly scheduled Culinary Council meeting within Campus Dining, that a bold proposal was put on the table. Chefs Brad, Dan and Christeen suggested that a station featuring beans, greens and grains replace the pizza station in Butler/Wilson, a favorite among students.

Bold concepts are not unusual at Culinary Council meetings, where members typically ideate, looking to initiatives that might be introduced in upcoming semesters. But replacing pizza with beans, greens and grains? That seemed a tall order, even though it aligned with the mission and philosophy of Campus Dining, and with various Princeton initiatives in nutrition and sustainability that culminated in the Food and Agriculture Initiative.

A partnership among faculty, Campus Dining, and the Office of Sustainability, the Food and Agriculture Initiative explores global food and agriculture systems as a subject of critical inquiry and applied knowledge.

A case in point: palm oil.

The cultivation of oil palm (for palm oil) is widely recognized as one of the major drivers of deforestation in Southeast Asia and, increasingly, in the New World tropics. Millions of acres of tropical forests have been cleared and replaced with monotypic stands of oil palm, resulting in tremendous losses of biodiversity.

Working with Campus Dining, the Food and Agriculture Initiative found an opportunity to test how easily an environmentally responsible purchaser (in this case, Princeton University) can identify the sourcing of food products containing palm oil and replace unsustainable sources with certified sources.

The Beans, Green & Grains proposal had at its heart nutrition and sustainability goals like these. But even so—eliminate the pizza station? How would that go down with students?

Some data points help to illuminate the degree of the challenge.

According to the HuffPost in 2017, the food ordering app GrubHub, working with Spoon University, analyzed data of users on college campuses to figure out various trends in how and what foods students order.

The analysis reveals that the foods students order most are:

1. Pizza
2. Fries
3. Wings
4. Soup
5. Salad

And let us not forget that National Pizza Pie Day is celebrated annually in the US (it was February 9 of this year).

“I was a little bit wary of it when I first heard about the Beans, Greens & Grains station,” says Alexandra Wheatley, who was an undergraduate at Princeton when the initiative launched. It took her by surprise.

“I knew there would be segments of the Princeton population that really wouldn't want to migrate away from pizza. But at the same time, I was really excited about it.”

In April of 2017, she wrote a piece for The Daily Princetonian in which she opined: “Campus Dining has embraced ‘plant forward’ menus that highlight great flavors and healthy, sustainable ingredients. As part of the Culinary Institute of America and the Harvard T' Hill School of Public Health’s Menus of Change program, this plant forward approach is Princeton’s way of integrating optimal nutrition, environmental stewardship, and social responsibility into the meals we eat each day.”

Nearly a year later, her appreciation of the station is exclamatory.

“It’s awesome! Eating green is one of the best things you can do for yourself and the environment. If you cut out meat in your diet, it’s better for the planet than reducing...
your driving and recycling your waste.”

Alex isn’t alone in her enthusiasm. Cecilia Shang, currently a senior in the Woodrow Wilson School for International Public Affairs, expresses a similar opinion.

“Beans, greens and grains is a small station in one dining hall. But it’s a win-win-win narrative. The fact that it highlights plant-forward diets and is healthful places it in line with our wellbeing and that of the planet. It changes behavior and unites people. That it does all this is necessary—and amazing!”

Cecilia also notes that Beans, Greens & Grains gives students a chance to interact with the Campus Dining staff, “the people preparing my food”—a welcome aspect of the station for many.

“If you can get excited about good food,” she summarizes, “then you can get excited about beans, greens and grains.”

Students began flocking to the new station almost immediately after it launched, in numbers that surprised just about everyone associated with the initiative—not least, Chef Brad, one of its originators.

“I thought there might be a lot of pushback for the pizza. In fact, there was little. Looking back on it today, during its roughly three semesters of operation, there has been more student demand for beans greens and grains than there was for pizza when that was what the station served.”

And why not, considering what awaits the hungry diner there:

• Delicious, nutritious, seasonally oriented foods that are cooked to order
• Moroccan, Mediterranean and Latin vegetarian stocks, among others, made from scratch
• Healthful oils, primarily olive, used in cooking
• Whole wheat pasta, gluten-free or not
• Frequently changing menus featuring the freshest foods
• Abundance of earth-friendly ingredients

“We wanted to make our menus more plant-forward and Beans, Greens & Grains was our answer,” Chef Brad explains. “I eat it all the time. I’m proud of it. There’s a lot of variety here. We can give you whatever you want.”

Smitha Haneef, Assistant Vice President, University Services, and Co-Chair of the Food and Agriculture Initiative, regarded the station as an experiment, one that might not work. Like Chef Brad and others, she too was surprised by its success.

“I hadn’t realized the level of interest it would garner,” she admits. “After the launch, in talking to graduate students on campus, they told me how well their needs were met there. As one student explained it, ‘I know I can always go to Beans, Greens & Grains and come away with something I like.’”

The success of the station may have something to do with its avoidance of markers that could prove to be turnoffs for students.

“We steer clear of buzzwords like vegan and sustainable and plant-based,” says Smitha. “It’s simply a fun experience that is also delicious and good for you.”

University Professor Elke Weber endorses this approach.

“The general strategy of not using identity-based labels, but focusing instead on the kinds of experiences that people actually enjoy, like taste, of presenting new options like quinoa in an appealing fashion, and not wagging a ‘you must’ finger at people, is ingenious.”

Beyond eating delicious foods that look as good as they taste, what else is in it for students choosing “Beans, Greens and Grains?”

Registered Dietician and Nutritionist Melissa Mirota has an answer.

“Eating at Beans, Greens & Grains makes it easy for you to achieve your daily amount of protein and fiber. You simply cannot order something unhealthful there.”

She continues, “Students in general don’t consume enough dietary fiber or micronutrients like magnesium and iron. By eating lentils, for example, you get 18 grams of protein and 16 grams of dietary fiber in every cup.”

Melissa views the station as a central part of Campus Dining’s approach to wellness and nutrition. To that end, she consults regularly with Chef Brad, helping to uncover new greens and seed grains that might be brought to bear on the experience of campus dining.

Is she surprised by the popularity of the station?

“No, not really, because in my experience at Princeton, students have been asking for more healthful fare for some time now. In fact, in 2016, in a national study that included 655 Princeton students, 71% of them asked for more information about healthful eating.”

She also points to the cognitive and behavioral benefits of eating healthfully.

“It has been shown to help students with concentration and general energy levels throughout the day, and to help them avoid over-eating and sugar consumption.”

While Melissa attends to the health of the students, Sustainability Manager Sarah Bavuso keeps an eye on new ways in which Princeton can help to cultivate the health of the planet.

“Campus Dining used to be very metric driven—for example, reduce carbon emissions by x amount of tons,” she explains. “In recent years, there has been a philosophical shift toward an ethos of sustainability.”

And what does that mean?

“We’re still grappling with that question,” she admits, “defining what sustainability means. Building relationships with local food providers is part of it.”
According to Procurement Director Linda Recine, who with Smitha Haneef is out visiting Campus Dining’s farm partners 2-3 times a month, 64% of foods now served on campus are locally sourced. And many of those foods—legumes and pulses, for example—support biodiversity, which is viewed today as even more important to the health of the planet than growing organically.

Legumes? Pulses? Biodiversity?

Legumes are vegetables, the most common variety being beans. Peas and lentils are also legumes. They all have high nutritional value, being rich in protein, fiber and carbohydrates.

Pulses are the edible seeds of plants in the legume family, and grow in pods. They include dry beans, dry broad beans, dry peas, chickpeas and lentils. Pulses are healthful and nutritious. Growing them promotes sustainable agriculture, as pulse crops help to decrease greenhouse gases, increase soil health, and use less water than other crops.

According to the Food and Agriculture Organization of the United Nations (FAO), “pulses are able to increase biodiversity as they are able to fix their own nitrogen into the soil, which increases soil fertility.”

The FAO defines biodiversity as “the variability among living organisms from all sources and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

The President of Mauritius, Ameenah Gurib-Fakim, shared her global perspective on the importance of biodiversity during her visit to campus in 2017 under the aegis of the Food and Agriculture Initiative.

“Biodiversity is the basis of life and central to human existence. Over millennia, humans have depended on plant diversity, both wild and cultivated, to meet their needs. Biodiversity is a critical resource not only to address sustainable agriculture, but also for sustaining our ecosystems.”

Sarah brings this home to Princeton.

“I think of nutrition and sustainability as the double helix that informs Princeton’s efforts—and Campus Dining’s specifically—to address global issues on the local level. The Beans, Greens & Grains initiative checks all the boxes of the helix.

“Nutritionally, plant-based diets are better for us. Sustainably, they’re better for the planet because they use fewer resources and don’t require chemical fertilizers if you’re growing things properly.”

One example of the sustainability argument for plant-based diets can be found in a study conducted by University of Minnesota Professor of Ecology G. David Tilman and graduate student Michael Clark that was published in *Nature* and cited on the United Nations University website. The researchers found that greenhouse gas emissions per gram of protein for beef and lamb are about 250 times those of legumes, and that twenty servings of vegetables have fewer greenhouse gas emissions than one serving of beef.

The “double helix” of nutrition and sustainability vivifies the curriculum at Princeton too, as Professor Dan Rubenstein’s new course, *Agriculture, Human Diets and the Environment*, illustrates.

The course description reads, in part: *Food fuels us and connects us with nature. Yet most of us poorly understand how food is produced and how production processes impact our diets, health, livelihoods and the environment. By the course’s end, students will be confident when food shopping or perusing menus that they will make sound ethical, environmental, economic, social and medical choices.*

“It’s always good when students are able to reflect on what they’re doing, and why,” Professor Rubenstein explains. “They’re much more aware today of environmental issues.”

Evidence of this can be found in the fact that the course is by application; every student had to write why they wanted to take it.

“90% of them are there because they’re committed to changing their behavior in a way that will sustain the planet,” he explains. “They want to learn more about what’s the best way to do that.

“With the Beans, Greens & Grains station, Campus Dining is contributing to that learning too, in effect saying that taking control of your eating for your health and the good of the environment is something not to be taken for granted.”

Pointing to the work of the Princeton Environmental Institute, where he is an associate, Professor Rubenstein continues, “At Princeton, we’re working together as ecologists, psychologists, economists, policy-makers, and sociologists, to look at the full gamut of human impacts on the environment.

“As scientists and engineers, we can build better mousetraps. But if no one is using those new mousetraps, they have no impact. We’ve got to figure out how to make those new tools not just accessible, but desirable to people, so they engage with them.”

Professor Rubenstein and Smitha Haneef
worked together to create 12 culinary labs for the course that test his theoretical concepts against the experiential learning that she designs. Culinary labs are extensions of the Food and Agriculture Initiative, and are key components of the University's overall effort to live and put into practice the ideals of research into the environment and health.

To illustrate how one of these labs work, there was a lecture about the environmental challenges facing a growing population in 2050, followed by a demo and tasting of more sustainable choices—possible staples of a future diet—e.g., crickets, seaweed vs. lettuce, beef substitutes rather than beef.

“At the university, we are about pure science, pure knowledge,” Smitha Haneef explains. “Some of our faculty suggests we generate pure knowledge such that other institutions can draw from that, and develop different applications through that knowledge.

“With food systems, Campus Dining has taken the approach of an applied sciences partner. How might we collaborate with you to bring your students’ learning experiences to life?

“In that sense, we are very much a laboratory.”

Professor Weber offers a similar perspective, and a wry comment on our human proclivities.

“Princeton as a laboratory is a very appropriate way to think about the institution. It is trying to put the theoretical to work in practical ways on campus. Addressing the idea of changing habits in the face of a new reality.

“Many of our decisions we don’t make consciously. We make them by force of habit. I think this is especially true with food. Many of our food choices are formed early in life. What we get fed by our parents, in school, in our friends’ homes forms those eating habits.

“So when we go to the grocery store, we buy the foods we’re familiar with, the things we’ve eaten for the last 20 years. Which doesn’t mean that there aren’t other food items that we would enjoy, if we would experience them.

“But we’re all sticks in the mud. We don’t like change. We like to do the things we’ve always done rather than make new choices.”

Princeton in general, and Campus Dining in particular, are trying to nudge students in the direction of changed patterns of behavior that will benefit their health and ultimately impact nothing less than the fate of the planet. It’s all about making new, and more informed, choices—about what we eat, what we don’t eat, and what that means for our world and for us as a species.

As Professor Rubenstein reminds us, “Students are going to have to live on the planet in 2050 with 9 billion people. How those 9 billion people are going to sustain themselves is not obvious.”

It seems likely that an important part of the answer to that question is, beans, greens and grains.

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About the Princeton Food and Agriculture Initiative

The Food and Agriculture initiative explores global food and agriculture as a subject of critical inquiry and applied knowledge to address social and environmental challenges in service of humanity. The initiative commits to identifying solutions and best practices for future generations through academics, research, global collaborations, physical spaces, and experiential learning. Founded in 2017, the initiative is co-chaired by Daniel Rubenstein, Class of 1877 Professor of Zoology and director of the Program in Environmental Studies, and Smitha Haneef, Assistant Vice President, University Services.