

Nuleaf Full Article:

What do two medical students, two engineering graduate students, and one undergraduate product designer have in common? The answer: a shared interest in public service and health outcomes in underserved populations. Ryan Brewster (SoM), Alejandro Aguirre (SoM), Akshay Chaudhari (SoE), and Taylor Sihavong (SoE)—joined later by Leo Shaw (SoE)—met through Stanford Biodesign’s graduate course “Biodesign for Mobile Health” in September 2016 and began brainstorming ways to engender concrete lifestyle changes for California’s low-income residents. One critical problem for this population is the implementation of CalFresh (formerly, California Food Stamps Program), which provides Californians earning below a threshold income with a monthly grocery stipend. While CalFresh does a great job of improving access to food for low-income populations, this model provides little direction to users on how to best spend their money. Given the economic landscape of the food industry in the US, this leads to a strong inclination to purchase inexpensive, calorie-dense foods in bulk, with obvious options being highly processed meals, fast food, and unhealthy snacks. As a result, low-income individuals are at higher risk for diet-related diseases, such as obesity and diabetes.

Following conversations with potential NuLeaf users, the team quickly discovered that California’s CalFresh users were indeed interested in monitoring their nutritional health—they just didn’t know where to start. Researching and collecting recipes, building cost approximations into already detailed monthly budgets, and taking time at home to cook a full meal requires significant amounts of time and energy. This presents a challenge for CalFresh recipients who too often have to work full time for low wages. A clear big-picture goal for the team was to simplify these tasks and guide users toward healthy choices with their limited budget. The students’ proposed solution takes form in NuLeaf, a mobile application specifically geared towards providing low-income Californians with nutritional guidance. NuLeaf is both educational and practical: users will be exposed to educational resources and helpful facts about how to make their own nutritional choices and plan more convenient, cost-effective, and healthy meals with the important option for cultural preferences.

Since its inception in September, team NuLeaf has made incredible progress. Marta Zanchi, part of Stanford Biodesign and NuLeaf’s main mentor, has nothing but praise for NuLeaf:

“Technology enables a wide and important array of health outcomes spanning the spectrum from wellness and prevention to therapeutics. Yet, often those who benefit are individuals and populations who already have access to health care. Some experts have argued that in the midst of recent advances, existing inequalities have even been exacerbated, with access to technology itself being a social determinant of health for the vulnerable or disadvantaged populations. Rarely do we see health technology innovation that is designed and transformative specifically for individuals who are underserved by our healthcare system. NuLeaf has the potential to finally shorten the divide with an original solution that was designed for these users, is grounded in sound nutritional science, and can make a tremendous positive difference.”

After winning the 2016 Biodesign “Mobile Health Innovation Award,” NuLeaf received additional mentorship and funding from Stanford Biodesign as part of their NEXT Fellowship pilot program. Strong partnerships with local food aggregators, such as Second Harvest Food

Bank, and the guidance of high-profile innovators have immensely helped in fortifying NuLeaf's goals and product vision. In February, team member Leo Shaw was brought on as their lead developer, and the team is now working hard at creating a working application by Summer 2017.

Know anybody who might be interested in NuLeaf? NuLeaf is looking to take on a front-end application developer and establish new partnerships with local food distributors. If you or others you know want to improve the health of low-income Californians, email rbrewster@stanford.edu to get in touch!