CTSC and Cornell Tech Team Up for 3D Printing Workshop Addressing Senior Needs

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Students from Weill Cornell Medicine's Clinical and Translational Science Center (CTSC) and Cornell Tech, during a 3D-printing open house on April 27, unveiled products they designed to help older adults with everyday tasks. The open house, which took place in the Tata Innovation Center's MakerLAB at Cornell Tech, was the culmination of a 3D Printed Life Hacks workshop aimed at finding technological solutions to transform students' ideas into physical products.

CTSC and Cornell Tech students partnered with residents from the Carter Burden Roosevelt Island Senior Center to understand some of the challenges older adults face, and how technological solutions could make their lives a little easier. Residents of the senior center described situations in which they could use aid, such as lifting and toting groceries, getting dressed, grasping and twisting objects, and remembering tasks. Six interdisciplinary teams then worked side-by-side with the seniors over seven weeks to develop products for the resulting six challenges.

CTSC participants included Dr. Karin Ouchida, an assistant professor of medicine, Eugenia Papadopoulos, an occupational therapist at Hospital for Special Surgery, Dr. Edward Schenck, an assistant professor of clinical medicine, Dr. Kiel Telesford, a postdoctoral associate in the Feil Family Brain and Mind Research Institute, Dr. Emily Wasserman, a pediatric fellow, and Dr. Jianjun Xie, research associate in pathology and laboratory medicine.

The workshop represents a cross-campus collaboration organized by Niti Parikh, creative lead of the MakerLab; Jane Swanson, assistant director of government and community relations at Cornell Tech; and My Linh H. Nguyen-Novotny, assistant director of programmatic development at Weill Cornell Medicine's CTSC.

The open house was a huge success, with each team presenting their products to attendees to view and test in real time. The 3D printing workshop and the upcoming second annual Health Innovation Hackathon, slated for May 18-20 exemplify the CTSC's commitment to train physician scientists within a project-centered, team-based, multi-disciplinary, mentored environment to collaborate on research that could affect human health.

Challenges and Products:

- **Challenge #1:** How might we create a product that will help consumers remember everyday tasks?

  Products: A mobile app-based reminder to take one's keys before leaving the home, straps to hang keys near the door and plastic adapters to grasp keys more easily for seniors with arthritis.
- **Challenge #2:** How might we develop a product that will help our consumers with getting dressed?

  Products: Assisted mechanisms with hooks to button up a shirt and an existing sock support tool.
- **Challenge #3:** How might we develop a product to help our consumers with limited strength/dexterity to use household products?

  Product: An adjustable strap to help open doorknobs, jars, bottles, etc., and to tighten those items, as well.
- **Challenge #4:** How might we create, modify, or augment existing products to improve their accessibility for our consumers, i.e., grasping, holding, twisting, opening, lifting, identifying?

  Product: A device that latches onto a seat belt for easier application.
- **Challenge #5:** How might we create a product that enhances our consumer's ability to carry essentials when they leave their residence?

  Product: A universal hinge that clasps onto a walker with a small platform on which to set a bag.
- **Challenge #6:** How might we develop a product that could enhance physical activity for our consumers with limited mobility?

  Product: A device that clamps to a walker and holds an iPad that seniors can use to follow online physical therapy programs.