

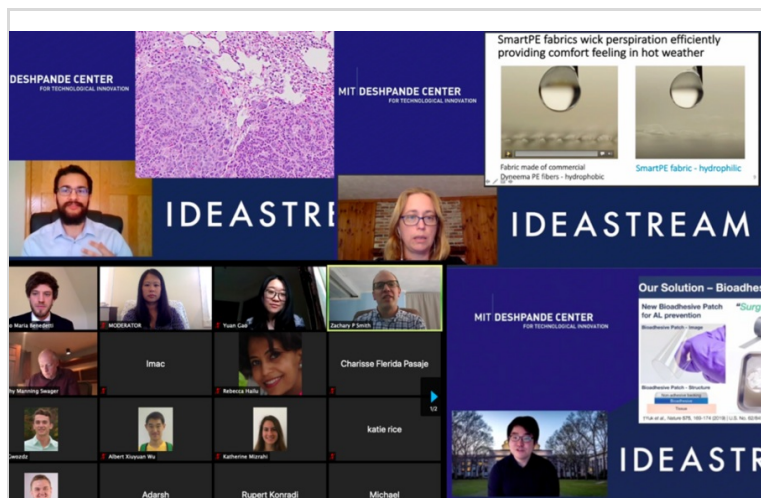
# DESHPANDE BITS & BYTES

## Message from the Executive Director



MIT is starting another academic year, in unprecedented ways. The past few months have brought unimaginable challenges to the world, and kept us physically apart. In true MIT spirit, our community has forged ahead to find new ways to be together, and to keep innovating. We regretted not being able to see colleagues and friends in person at our annual IdeaStream conference, but we connected with many more new faces across the country and the world virtually. And this fall, we begin another exciting Deshpande year of supporting groundbreaking technologies at MIT. From health and medical, to devices and machine learning, to energy and the environment, our PIs are conducting research with the potential to make the world a better place. Stay connected with us to see what they do next.

- Leon Sandler, Executive Director

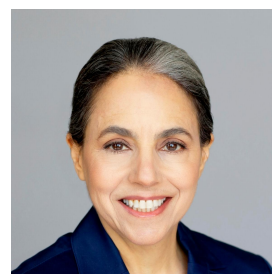


### IdeaStream 2020 hosted virtually, drawing a worldwide audience



The Deshpande Center took IdeaStream, an annual showcase of technologies being developed across MIT, online for the first time in the event's 18-year history. More than 500 people worldwide attended each day in May to view the breakthrough research and chat with the researchers. Attendees tuned in across Greater Boston and from as far as Ireland, India, Cyprus, Australia, and Brazil. "Innovation at MIT never stops," said Deshpande Center Faculty Director Timothy Swager, underscoring in his welcome address how essential it is to keep innovation going.

[Read the recap](#) | [Watch videos of the sessions](#)

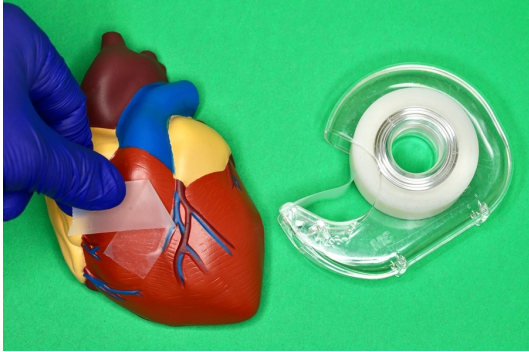


### Catalyst Spotlight: Lori Pressman

Lori Pressman has mentored grant teams as a Catalyst at the Deshpande Center for Technological Innovation almost since its founding, starting in 2005.

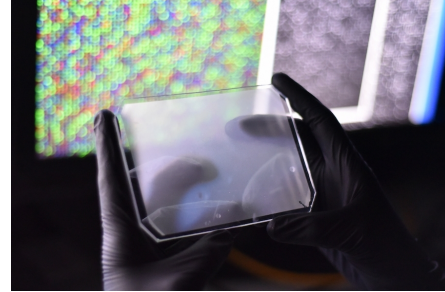
"First, the science," she said, when asked what keeps her coming back year after year. "Curiosity, problem solving, and collaboration are inherently optimistic. Then, the Deshpande Center directs all that optimism and energy toward solving practical problems and scaling the solutions in partnership with the private sector. Teamwork plus results that make a difference is good news, and a lot of fun."

[Read the rest of the interview](#) | [Explore our other Catalysts](#)



## Super-strong surgical tape detaches on demand

Last year the team of Deshpande grantee Xuanhe Zhao, professor of mechanical engineering, developed a double-sided adhesive that could stick to wet surfaces such as biological tissues. Now they have developed their adhesive so that it can be detached from the underlying tissue without causing any damage. By applying a liquid solution, the new version can be peeled away like a slippery gel in case it needs to be adjusted during surgery, for example, or removed once the tissue has healed. “This is like a painless Band-Aid for internal organs,” Zhao said. “You put the adhesive on, and if for any reason you want to take it off, you can do so on-demand, without pain.” This research is part of the Deshpande project [Super-Strong Surgical Tape](#). | [Read the MIT News article](#)



## CRISPR-based diagnostic chips perform thousands of tests simultaneously to detect viruses

Researchers have developed a new technology that flexibly scales up CRISPR-based molecular diagnostics, using microfluidics chips that can run thousands of tests simultaneously. A single chip’s capacity ranges from detecting a single type of virus in more than 1,000 samples at a time to searching a small number of samples for more than 160 different viruses, including the Covid-19 virus. Called Combinatorial Arrayed Reactions for Multiplexed Evaluation of Nucleic acids (CARMEN), this technology — validated on patient samples — provides same-day results and could someday be harnessed for broad public-health efforts. This research was part of the 2016 Deshpande project [Efficient Drug Discovery Screening](#). | [Read the MIT News article](#)

## Chemists make tough plastics recyclable

Thermosets are found in many products that have to be durable and heat-resistant. One drawback to these materials is they typically cannot be easily recycled or broken down after use, because the chemical bonds holding them together are stronger than those found in other materials such as thermoplastics. MIT chemists have developed a way to modify thermoset plastics with a chemical linker that makes the materials much easier to break down, but still allows them to retain the mechanical strength that makes them so useful. “This work unveils a fundamental design principle that we believe is general to any kind of thermoset with this basic architecture,” says Jeremiah Johnson, a professor of chemistry. Johnson’s project, [Cleavable Additives for Degradable, Recyclable Thermoset Plastics](#), is among the new Fall 2020 Deshpande projects. | [Read the MIT News article](#)



## Glympse Bio announces \$46.7M Series B financing

Deshpande spinout Glympse Bio announced \$46.7 million in Series B financing. The proceeds will support continued development of Glympse’s novel biosensor platform in fibrotic diseases such as Non-Alcoholic Steatohepatitis (NASH), oncology, and infectious diseases. Glympse spun out of the Deshpande project [Ultrasensitive Noninvasive Disease Monitoring Platform](#). | [Read More](#)

## Value proposition quantification workshop held in March

A big thanks to Catalyst Patrick Casey for leading our workshop in March on Value Proposition Quantification with Deshpande Innovation Manager Karen Golmer, and to our grantee teams for joining us.



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