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## *Reflecting on NPT's Core Value of Innovation Throughout a Time of Crisis*

*By Eileen R. Heisman, President & CEO*

Last March, I wrote about [innovation during time of crisis](#). Throughout the year, we knew that the development of COVID-19 vaccines was occurring at an accelerated pace. It was inspiring to witness the vaccine's historical "speed to market," however I also hoped that other scientific innovation would continue during the pandemic as well.

Innovation has always been important to me, being a part of my intense curiosity and lifelong interest in learning. It is no coincidence that innovation is among National Philanthropic Trust key values, along with inclusivity and integrity.

The innovation that occurred during the pandemic triggered memories of my father teaching me about the value and magic of inventions at an incredibly early age. He would sit on the couch with me reading the section of Popular Science Magazine focusing on new patents. As we flipped each page, he would explain to me the clever nature of the invention, what problem the inventor was addressing and convenience their inventions would bring to the users of the item. With the turn of every page, I recall how curious (and delighted) I was to hear his explanations. He would comment on how creative and thoughtful these inventors were in solving problems in everyday life.

I think back to these warm memories of my father often. Those times on the couch with dad sparked my deep love and admiration for innovation, and the way innovation connects us to our greater humanity. It is fascinating to me that a single idea, in the social sector or private sector, can be the catalyst for so much change. As I recognize that 2020 brought challenges to many, I predicted it would also spur innovative strides across different disciplines.

"Necessity is the mother of invention" was a phrase that always resonated with me. This past year was characterized by tremendous need—and was marked by many equally great innovations. Here are my recent favorite discoveries, inventions or collaborations from the year:

**[Augmented-Reality Guided Surgery](#):** A headset that uses augmented reality to turn a patient's CT scan into a 3-D visualization that helps guide a spinal surgeon through operations in which every millimeter counts. Surgeons will be able to see what is under a patient's skin without ever looking away from the operating table.

**[Hints of First Dinosaur DNA](#):** As 70-million-year-old fossils were being studied, a team identified the outlines of cells, forms that may be chromosomes and several possible nuclei - which are all the structures that house DNA.

**[A Universal Port for the Brain](#):** This device serves as a smart port to the brain that will use artificial intelligence to selectively stimulate tissue regrowth and seizure intervention. Having optical and electrical sensors permanently implanted in the dura could aid in the monitoring and treatment of conditions such as epilepsy, brain tumors, or even mental illnesses.

## Reflecting on NPT's Core Value of Innovation Throughout a Time of Crisis (continued)

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**[Reef Taller Than Empire State Building](#)**: Australian scientists discovered a towering skyscraper of coral, more than 1,640 feet (about the height of the Empire State Building), as they were mapping the northern Great Barrier Reef seafloor. This discovery is the first of its kind in more than 120 years.

**[Women Invested to Save Earth \(WISE\) Fund](#)**: Created to promote funding equity for underrepresented founders and strengthen women's organizations addressing environmental decline. The WISE Fund supports some of the world's most promising but underfunded impact organizations working in environmentally distressed, low-income communities of Africa, Australia, Brazil and the US. WISE Innovators are Black and Indigenous women-led or benefitting cleantech organizations with scalable innovations.

**[Gardyn – The Ultimate Indoor Garden](#)**: Gardyn is an indoor-growing system that lets you choose from an assortment of fruits, vegetables, greens, herbs and flowers that can conveniently ripen right in your living room.

**[Light Shines Institute/Energy Efficiency Ltd.](#)**: A for-purpose hybrid organization creating internet access through off-grid solar lights using sugar cane waste in South Africa.

**[Climate TRACE](#)**: As the first of its kind environmental analytics tool, scientists say that the information this will collect will help environmental organizations verify that governments around the globe are honoring pledges to cut greenhouse gases.

**[AI and Smartphone-Assisted Therapy](#)**: AI-powered tools, chatbots and smartphone apps can [help patients](#) with cognitive behavioral therapy and analyze a patient's voice for warning signs of emotional distress. These tools will not replace human counselors but act as an assistant who's available 24/7 to support a patient and alert the provider if an intervention is needed.

**[Fresh Drinking Water Anywhere](#)**: This mobile generator produces fresh drinking water via an often-overlooked source: air. Discarded plant and animal materials, such as wood chips or nutshells, are dumped and heated in the machine, which releases water vapor into the air. The vapor then gets condensed into drinkable water.

These are just a handful of my favorites, and there are plenty more. It is incredible to see that scientific innovations in 2020 were abundant. As we begin this new year, these creative achievements not only remind me of those precious moments with my father, but also inspire me to focus and support ways to improve the world we all inhabit.

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