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Bristol Myers Squibb Senior Research Investigator Lucy Hawarden was working from her home office in northwest England one week this past winter, but her eyes were trained on events thousands of miles away. Equipped with an augmented reality headset, Lucy watched the labs and production area of a pharmaceutical manufacturing facility in Asia in real time as it produced clinical trial batches of a new investigational medicine for the company.

In normal times, Lucy would have boarded an international flight to the facility, a contract manufacturing partner supporting the medicine's development. A key milestone was at hand involving the production of the drug's pediatric formulation. As "lead formulator" in charge of that dosage form she would have been there to monitor the activities in person. While being on-site wasn't possible due to COVID-19 travel restrictions, the technology still allowed her to be present.



Senior Research Investigator Lucy Hawarden monitored production at a manufacturing facility in Asia while working from home in the U.K.

"I was able to remotely view all stages of the clinical manufacture, covering dispensing and blending, granulation, compression and coating, and also give feedback to the team there," she said. "The batches were successfully manufactured and released, keeping timelines for the drug's development on track."

Augmented reality in healthcare: biopharmaceutical manufacturing

COVID-19 has prompted rapid adoption of video and web conferencing tools across many workplaces, including Bristol Myers Squibb. This technology goes a step further at the company's Global Product Development & Supply (GPS) organization, a business unit that oversees worldwide product development, manufacturing and delivery of the company's medicines. Here the new tools include specialized headsets that work like hands-free, wearable tablets and connect users with real-time video and data from across the company's global network of sites.

It's all part of the ARGILE program, or Assistive Reality Gadgets in Lab Environments. Program Lead Nobel Vale, a principal scientist in the GPS Product Development group, launched the initiative in 2018 to explore the feasibility and versatility of assistive reality tools to help accomplish certain work remotely.



Principal Scientist Nobel Vale uses an augmented reality headset supplied by Apprentice.io.

monitored the drug's production needed installation and the person with the expertise couldn't be there. Using the technology, the expert guided an employee on-site in the equipment's setup and resolved several issues that arose during production.

Nobel said the company now has about 10 times the number of augmented reality devices as it did when the pilot began. Other uses include providing virtual lab tours to job candidates when only essential personnel are allowed on-site, and training people in the use of specialized equipment.

"Once people started seeing what we could do, it expanded more and more," he said.

As for Lucy, while she looks forward to one day getting back in the field, she credits the technology for enabling an important project to go forward and envisions potential uses even after the pandemic.

"The success of this particular batch manufacture was critical to the program," she said. "While augmented reality technology shouldn't completely replace in-person interactions, this method of working could be important in times of restricted travel, and when observations are required at short notice when travel would not be possible in the short time frame."

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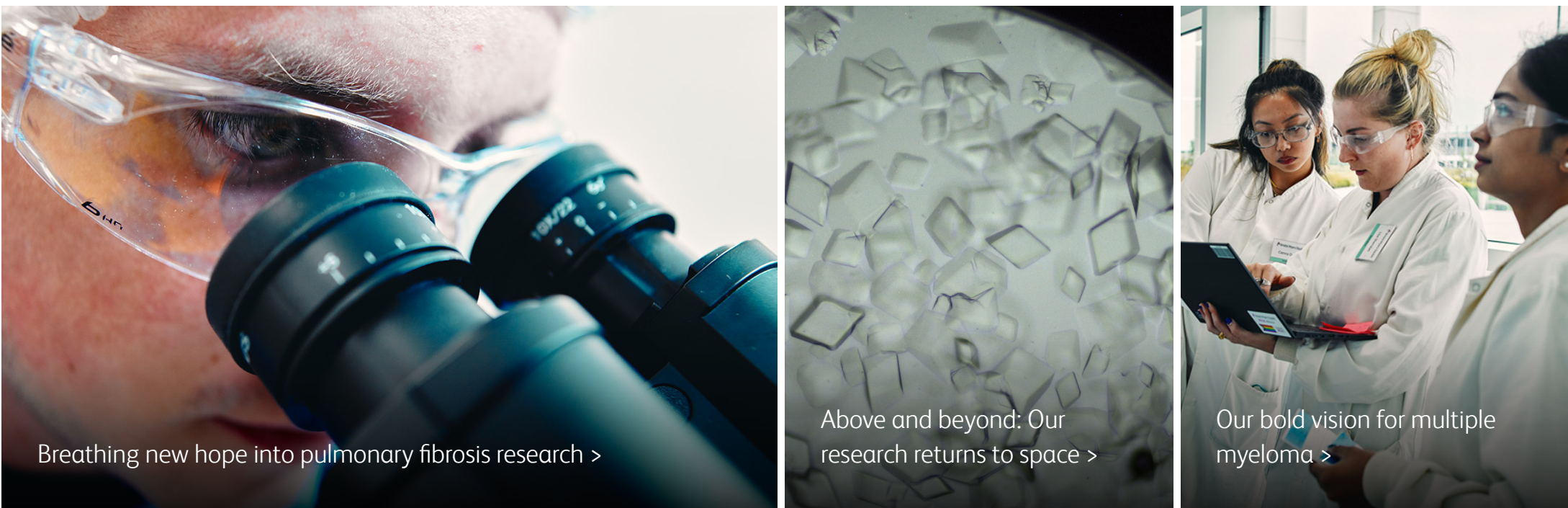
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