

# Sandy-Stricken New York Sequencing Facilities Start to Recover; Losses Limited for Most



By [Julia Karow](#)

**A week after Hurricane Sandy** pummeled the East coast, sequencing facilities across New York City and at Cold Spring Harbor Laboratory on Long Island are starting to get back to business as usual.

Several sequencing centers suffered power outages during the storm, and many had to deal with the aftermath of the hurricane in some way or another last week, including shortages in personnel.

A variety of precautions taken before the storm, including the installation of backup power and manual instrument shut-downs, appear to have prevented the worst for the majority of centers.

The New York Genome Center houses several Illumina HiSeqs as well as a MiSeq at a pilot laboratory at Rockefeller University, which is located on the bank of the East River. Nancy Kelley, the center's executive director, through her staff, told *In Sequence* via email that while Rockefeller lost power during the storm, the center's sensitive sequencing and data storage systems were connected to the university's generator power and battery backup and saw no disruption in service. "The sequencers continued to process their samples without interruption or glitches," she said.

Less sensitive equipment, such as freezers, briefly lost power but came back on immediately since they were also connected to the generator system.

The NYGC rents space in a data center at Rockefeller, giving it enough capacity to store three months' worth of data, which was also protected by backup power. The center stores files locally at that center prior to transferring them to its data warehouse at Sabey Intergate Manhattan in downtown Manhattan near the Brooklyn Bridge.

Some of the center's systems at the Sabey facility lost power and network connectivity during the storm, but "the Sabey team worked quickly and diligently to restore connectivity and re-establish our primary connection," Kelley said. "Since we store all of our data in at least two locations at all times, this did not slow our operations in any way."

In addition, the NYGC uses Amazon cloud servers for storage, and its bioinformatics team "is actively continuing to develop software pipelines on those systems, as the city works to restore basic services."

Next summer, the NYGC is scheduled to move into a permanent facility on 6th Avenue in Lower Manhattan, near the entrance to the Holland Tunnel, which crosses underneath the Hudson River. Floodwaters rose to a block away from the building, Kelley said, but there was no damage to the building itself, which remained out of power as of Sunday, causing a slight delay in ongoing construction work.

"We did everything we could do from an operational and construction perspective to ensure that we were prepared for the storm. Our backup and contingency plans worked as expected and we are using this opportunity to further refine our contingency plans for our larger facility," Kelley said.

"Our staff working at kitchen tables, local coffee shops, and apartments continued to work throughout the storm and had daily conference calls to ensure that our planned activities were only minimally affected," she said.

Cold Spring Harbor Laboratory's Woodbury Genome Center, located a few miles from the CSHL main campus on Long Island, also escaped major damage from the storm while many communities in the area lost power. "We are fortunately back in operation," Dick McCombie, a professor of CSHL and head of the lab's DNA Sequencing Shared Resource, told *In Sequence* via email two days after the hurricane. "We paused runs Sunday and we have power now, so our initial assessment is little to no problems here at the Woodbury campus."

The Woodbury center is probably the largest sequencing facility in the New York area: According to its website, it currently houses nine Illumina HiSeq 2000s, three Genome Analyzers, one MiSeq, one Ion Torrent PGM and two Pacific Biosciences RS sequencers.

Meanwhile, the Genomic Sequencing Core facility at the Center for Genomics and Systems Biology at New York University, which is located at the university's main campus near Washington Square Park in downtown Manhattan, prepared for a possible power outage prior to the storm by turning off all its equipment and by unplugging it in order to avoid damage from a power surge.

The facility, which lost power for several days, "luckily had no HiSeq runs scheduled anyway," said Jane Carlton, the center's faculty director of genomic sequencing, in an email message. It also asked Life Technologies to delay delivery of an Ion Torrent PGM that was scheduled for last week. "From what we can gather, there has been no damage to the genomics equipment, and we hope to resume normal activities later this week — including taking delivery of the PGM!" she said.

Another NYU sequencing core facility, located in the Medical Science Building, which is part of the NYU Langone Medical Center campus near the East River, was still closed as of early this week as the building had only limited power and no water service. Elisa Venturi, the sequencing core director, and Sheenah Mische, the core facilities manager, could not be reached prior to deadline. As was widely reported, NYU Medical Center's backup generators failed during the storm, resulting in the evacuation of the hospital.

The Genomics Core Laboratory at Memorial Sloan Kettering Cancer Center, about 35 blocks north and one block removed from the East River, appears to have done better. "We were *very* lucky, as we did not lose power," Agnes Viale, head of the core facility, told *In Sequence* via email.

Viale said the lab had started runs on its Life Tech SOLiD 5500 and Illumina HiSeq the week before, which were still ongoing during the storm, and had started two Ion Proton runs on Friday afternoon, which they knew would finish that night. She said the only problem the lab faced was a temperature surge in the room that houses its 454 FLX, where a server was damaged.

Two days after the storm, when the MSKCC research building reopened, the core was up and running again, though staff members faced difficulties getting to work. "Members of my team are living all over the city, Staten Island, Brooklyn, Astoria, New Jersey, Harlem, Flushing, and with no subway, it was extremely difficult for them to come to work," Viale said. "But they were all amazing: on average, it took them over three hours to come, but most of them were here. They walked over the bridges, they used MSKCC shuttles, they car-pooled."

One block north at the Weill Cornell Medical College, which is located by the East River, sequencing also remained uninterrupted. According to Jenny Xiang, director of the Genomics Resources Core Facility, runs on the lab's two Illumina HiSeqs began the week before the storm and "since we have emergency power installed at our core facility, we didn't worry that much."

She said in an e-mail that one of her staff members who lives close by came to the lab the day after the storm and continued a paired-end sequencing run, and their bioinformatician was able to connect to the lab's data server from his home to analyze data from a sequencing run that had finished over the weekend and to transfer the data to the customer's server.

Over on the West Side, at Mount Sinai School of Medicine, the Genomics Core of the Institute for Genomics and Multiscale Biology was getting ready to resume work this week.

Milind Mahajan, the core facility's director, told *In Sequence* by email that the center had planned for all sequencing runs to be complete between Sunday evening and Monday afternoon, shortly before the storm hit, and to automatically store the data on the server. "Everything went as per the plan and there was no interruption or data loss," he said.

According to Lisa Edelman, director of the Mount Sinai Genetic Testing Laboratory, there was no power outage at Mount Sinai but staffing remained a problem in the clinical labs last week as personnel commuting from outside of Manhattan had difficulties getting to work.

As of last Thursday, Mount Sinai's genomics core was getting samples ready for sequencing and conducted maintenance wash cycles on its Illumina HiSeqs in order to "start a fresh cycle of sequencing on Monday," Mahajan said.