

Coriell Institute s'associe avec IBM pour faire avancer la médecine personnalisée

La biobanque du Coriell Institute contribue à la préservation et à la gestion des données ADN afin d'approfondir la compréhension du diabète, du cancer et des maladies cardiaques.

Paris, France - 19 juil. 2011: IBM annonce aujourd'hui l'utilisation de ses logiciels de surveillance par le « Coriell Institute for Medical Research », la plus grande biobanque de cellules humaines vivantes. Cet institut souhaite, avec l'aide des technologies IBM, faire progresser la recherche sur les maladies génétiques humaines et conserver avec plus d'efficacité son importante collection de ressources biologiques.

Grâce à IBM, Coriell a désormais les moyens de mieux protéger ses millions d'échantillons génétiques. L'institut augmente également sa capacité à gérer l'imposante masse de données générée par les analyses de génomes de populations aussi nombreuses que diverses et nécessaires à l'étude des causes de maladies graves telles que le diabète, le cancer et les maladies cardiaques.

Acteur incontournable de la recherche biomédicale moderne, Coriell utilise des congélateurs cryogéniques pouvant accueillir plus de quarante-huit mille échantillons. Ces congélateurs sont pourtant susceptibles de connaître des pannes mécaniques lors de leur utilisation. Jusqu'à présent, les équipes d'intervention ne pouvaient être alertées qu'en cas de panne totale de l'unité. Elles devaient alors se dépêcher de déplacer les échantillons biologiques vers une unité de secours. Aujourd'hui, avec la mise en place des logiciels de surveillance d'IBM, les chercheurs de l'institut Coriell sont alertés à l'avance et de manière instantanée. Ils peuvent donc agir rapidement, avant que la panne mécanique ne survienne, et protéger ainsi l'intégrité des échantillons.

Coriell Institute Teams With IBM to Advance Personalized Medicine

Biobank Helps Preserve and Manage DNA Data for Better Insight into Diabetes, Cancer and Heart Disease

ARMONK, N.Y. and CAMDEN, N.J., - 19 Jul 2011: IBM (NYSE: [IBM](#)) today announced that Coriell Institute for Medical Research, the largest biobank of living human cells, is using IBM technology to advance its research of human genetic disease and to more efficiently maintain its massive collection of biological resources.

As a result, Coriell can now better protect millions of genetic samples while also increasing its capacity to manage the volume of data generated by analyzing the genomes of large and diverse populations needed to examine the causes of critical diseases such as diabetes, cancer, and heart disease.

As a vital player in modern biomedical research, Coriell manages cryogenic freezers that can house up to 48,000 samples and which may experience a mechanical failure while in use. In the past, response teams had only been alerted in the event of a total failure of the unit requiring the staff to quickly move the biological samples to a standby unit. With the implementation of IBM monitoring software, Coriell researchers are now instantly alerted in advance to quickly respond before any mechanical failure occurs and in turn, protect the integrity of the sample.

Coriell's 'Big Data' challenge

Scientists from major research centers around the world draw upon Coriell's diverse collections of biomaterials, which contain cell lines, DNA, and other samples, representing more than half of approximately 4,000 known genetic diseases. In addition, Coriell is exploring advancement in personalized medicine using one's genetic information to tailor individual patient medical care while ensuring an individual's privacy.

"The healthcare industry is placing greater emphasis on the use of genetic information in making medical decisions," said Scott Megill, Coriell's Chief Information Officer. "As a leader in genomics, Coriell is exploring the clinical utility of this personalized approach to medicine. The breadth of data output created by our research introduced new challenges to analyze and store this information," Megill added. "IBM is enabling Coriell to more effectively gather and analyze this data for our research."

Overall storage costs reduced by more than 30 percent

Coriell needed to address the challenge of supporting data collections generated from more than two million ampules of cells, one million vials of DNA, and hundreds of thousands of other biomaterials. In addition, the Coriell Personalized Medicine Collaborative Research Study – which captures an individual's genetic differences to better understand causes for diseases – created an additional data challenge to the Institute. Each participant in the study is genotyped using an array-based technology producing more than two million points of data, equaling approximately 1.5 GB of information per person. With a target goal of 100,000 participants for the study, Coriell faced a massive information storage demand that was simply too cost prohibitive using legacy storage platforms.

Coriell turned to IBM and IBM Business Partner Mainline to help drive the organization's technology transformation to help manage the millions of biological samples and associated data. The use of IBM storage system at Coriell scales more cost effectively than traditional disk storage and, as a result of using IBM's low-cost storage technology, Coriell has reduced its information storage costs by 30 percent.

In order to meet the challenges of a biobanking center that supports national and international scientific research, Coriell also looked to IBM to provide a process tracking system to quickly and easily adapt to the nuances of such a diverse biological collection. Layered with Coriell's inventory management system, IBM software allows Coriell to electronically track each sample as it moves through various laboratory processes. These samples vary greatly in type, disease state, age, and other characteristics, and the ability to quickly pinpoint the location and specific processing stage of a particular sample provides a key advantage to Coriell.

Critical response times for freezer failures significantly reduced

Today, with the deployment of a new sensor array and IBM's monitoring software, Coriell has the ability to monitor real time freezer parameters, helping Coriell to proactively intercede before unit failure, effectively removing risk to the samples. In addition, Coriell now has the capability to understand the impact of those events on each individual sample. A wireless probe array installed in the nitrogen tanks, incubators, and freezers feeds data to a central monitoring system in real time to give each laboratory a view into all activity taking place within the units storing samples.

The intelligence now built into the functionality of the systems means Coriell can more effectively provide scientists with the highest-quality biological samples needed to answer their research questions.

"Globalization has created an enormous opportunity for small to midsize firms such as Coriell to collaborate with research centers around the world. As advanced technologies have become affordable and available, Coriell is able to keep costs down and increase efficiency while also driving innovation in the area of personalized medicine," said Andy Monshaw, general manager of IBM's Global Midmarket Business. "Aligning the right technology infrastructure to meet its Big Data challenges, Coriell is well positioned to promote tomorrow's medicines and treatments to help usher in a new era of medicine."

The complete Coriell solution is powered by IBM technology that includes: IBM XIV Storage System, IBM Tivoli Maximo, IBM Tivoli Netcool and IBM WebSphere Lombardi Edition.

About Coriell:

Coriell Institute for Medical Research (www.coriell.org) is an internationally known, non-profit, biomedical research institution headquartered in Camden, NJ. Founded in 1953, Coriell is the world's leading biobank resource for biological materials, a leader in induced pluripotent stem cell research, and home of the Coriell Personalized Medicine Collaborative® (CPMC®) research study, a forward-looking project aimed at understanding the utility of genome-informed personalized medicine (www.cpmc.coriell.org).

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