Empowering Researchers
To Innovate Without Constraints

High performance computing from AWS, powered by Intel Xeon technology, is helping life sciences disciplines such as genomics, clinical trial simulation, and computational chemistry.

To address this need, many organizations are moving their workloads to Amazon Web Services (AWS) and using Intel® Xeon® technology-powered Amazon EC2 instances for their research and engineering needs. AWS and Intel empower life sciences researchers to innovate without constraints by taking advantage of virtually unlimited infrastructure and agility not attainable on-premises.

Here are four real-world examples:


Genomics

*33%* of NICU patients with genetic diseases

*40%* of newborns with unexplained illnesses who received life-changing treatments

**Clinical Trial Simulation**

Simulations dramatically reduce clinical trial costs

**US$33.4M**

BMS saved US$33.4M from 50% faster clinical trial simulation.

**98%**

98% faster deployment of 100,000 cores for research computations

**Clinical trial simulation benefits**

Clinical trial simulation:

- Impact on trial subjects
  - 33% fewer participants
  - 58% fewer blood draws
  - 46 hours reduced hospital stay
- Impact on business
  - 10 months reduced length of study
  - $450,000 cost savings

**Computational Chemistry**

Cloud-based platform speeds time to market for new drugs

**98%**

98% faster

**Average length of drug discovery and development process**

10-15 years

Researchers shortened drug discovery using OpenEye Orion software running on AWS

**Computational chemistry benefits**

- Median cost of conducting a study from protocol approval to final clinical trial report
  - US $450,000
  - 4 years

**Artificial Intelligence**

Deep learning algorithms will read X-rays and guide interventions

**70%**

70% fewer X-rays will be ordered at least once this year

**Deep learning application**

- Automatically identify abnormal X-rays

- Guide interventions to help clinicians quickly prioritize and treat patients with pneumonia, a potentially life-threatening condition

**Virtual Private Cloud**

Secure computing environment

Secured by a virtual private network

EC2

Secure firewall

Bristol-Myers Squibb Network

Algorithms developed by GE Healthcare and CDHI running on AWS will learn to detect anomalies more accurately and efficiently